DOCUMENT RESUME

ED 052 976 SE 012 098

AUTHOR	Spragg, Edward; And Others
TITLE	Tobacco, Drug, and Alcohol Unit, Seventh Grade.
INSTITUTION	Great Falls Public Schools, Mont.
SPONS AGENCY	Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
PUB DATE	[71]
NOTE	323p.
EDRS PRICE	EDRS Price MF-$0.65 HC-$13.16
DESCRIPTORS	Alcoholism, *Curriculum Guides, Drug Abuse, *Grade 7, *Health Education, Instructional Materials, *Social Sciences, Teaching Guides, Tobacco
IDENTIFIERS	ESEA Title III

ABSTRACT

A seventh grade unit on tobacco, drugs, and alcohol is presented in this curriculum guide for teachers. The introductory section states general objectives and specific knowledge facts for each of the three study areas. Also, skills and attitudes to be developed, general motivating activities, and teaching hints for slow and rapid learners are included. Individual units enumerate basic concepts and suggest teacher and student materials, audio visual aids, motivating questions, and activities to develop the concepts. An appropriate glossary of terms and additional teacher information and ideas supplement each study area. Culminating activities and teacher-pupil evaluation of knowledge, skills, and attitudes for the entire unit conclude the guide. Sources of information and a bibliography are listed. This work was prepared under an ESEA Title III contract. (BL)

ED052976

Great Falls Public Schools
Great Falls, Montana

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TOBACCO, DRUG, AND ALCOHOL UNIT

SEVENTH GRADE

SE 012 098

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Great Falls Public Schools
Great Falls, Montana

TOBACCO, DRUG, AND ALCOHOL UNIT

SEVENTH GRADE

Instructional Materials Center
ESEA Title III Project 68-05115-0
Robert C. Jewell, Director

Great Falls Public Schools
Great Falls, Montana

TOBACCO, DRUG, AND ALCOHOL UNIT

SEVENTH GRADE

er
115-0

Prepared by:
Edward Spragg - Tobacco
Robert Roach - Tobacco
Stanley Tolliver - Alcohol
Kenneth Leland - Drugs

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INTRODUCTION

Americans have a tradition of popular concern for social welfare and reform, has extended over a period of almost 200 years. At the present time there are many ar welfare which the American people are concerned with.

Some welfare problems have been corrected or improved by legislation, econom social adjustment. The basis for all methods of control of social problems is educat

Three topics that are best approached by education are the uses of alcohol, Due to their general acceptance by the general public in the United States, other meth been slow or ineffective.

Education of the public will not solve all of these problems. By introducin public and letting them evaluate and derive their own conclusions, we at least have a Scientists in the fields of physiology, biochemistry, psychology, and sociology have amount of knowledge on the subjects of alcohol, drugs, and tobacco that truly inform involved.

Information on these topics is available in the form of books, pamphlets, t magazines, and newspapers. Educators now have the means to approach the problems of and drinking. Because of the variations in attitudes and backgrounds of the students needs and personal attitudes of the individuals. As teachers, we must attempt to dea these topics: drugs, alcohol, and tobacco. Students need the opportunity to explore not only their own feelings but, also, the facts and attitudes regarding the use of d tobacco, that circulate in our culture.

"The federal funds in this project were provided by ESEA Title III. Title and Secondary Education Act is designed to encourage the development of new ideas, to innovations in education through exemplary programs and to supplement existing progra

INTRODUCTION

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alcohol, drugs, and tobacco that truly inform the users of the risks

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now have the means to approach the problems of drug use, smoking,
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acco. Students need the opportunity to explore and analyze
the facts and attitudes regarding the use of drugs, alcohol, and
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roject were provided by ESEA Title III. Title III of the Elementary
d to encourage the development of new ideas, to demonstrate worthwhile
plary programs and to supplement existing programs."

OBJECTIVES

GENERAL

To present the facts of tobacco, alcohol, and drugs to the students in such a manner
beneficial in helping them to make personal decisions regarding its use.

KNOWLEDGE

TOBACCO

General

Smoking is recognized as a leading cause of cancer and is a prime factor in respir

Specific

Smoking is the nation's No. 1 habit.

Habits start oftentimes when a person is young and once started, are hard to break

Tobacco smoke contains many poisons.

Smoking has a deteriorating effect on the normal body process.

Smoking is a major cause of poor blood circulation.

The public is being made aware of the dangers of smoking.

The reason adults smoke is normally different from those of teenagers.

The death rates of smokers is considerably higher than those of non-smokers.

Cigarette advertising is designed to influence people to smoke.

The increase in lung cancer is proportioned to the increase in cigarette smoking.

Correct decisions made early in life tend to minimize those of later life.

OBJECTIVES

GENERAL

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sonal decisions regarding its use.

KNOWLEDGE

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portioned to the increase in cigarette smoking.

fe tend to minimize those of later life.

OBJECTIVES (continued)

Smokers are subject to more common illnesses than non-smokers.

The smoking habit can be quite costly in $ and ¢.

DRUGS

General

To show students proper and improper use of drugs.

To show how the different drugs effect the body.

To show how the use of drugs effects us socially and monetarily.

To show how drug abuse is becoming a major problem to society, which includes a

Specific

To show the students the dangers of drugs.

To show the type of life to be endured as a result of drug abuse.

The reason why people turn to drugs.

How easy it is to start using drugs.

No drug should be taken unless prescribed by a physician. Purchase of "over-th be supervised by parents.

Everyone has problems at one time or another, but the abuse of drugs and the dr problems.

Habits developed while using drugs are very difficult to break.

OBJECTIVES (continued)

lnesses than non-smokers.

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ct the body.

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r another, but the abuse of drugs and the drug world will not solve

are very difficult to break.

OBJECTIVES (continued)

ALCOHOL

General

To inform students about the nature of alcohol and to give a realistic concept of i

Specific

To understand that we study about drugs because they may affect the quality and qua

Alcohol means many things to many people.

There are many types of alcohol.

Alcohol has been used by man for many years.

Men in the past have had problems with alcohol.

Many early cultures controlled excessive drinking by social bans.

Cultural ideas about drinking change and can be changed.

The national prohibition law was not approved by most of the people.

Chemically, alcohol is related to organic compounds that make up the structure of

All alcohols are compounds with a C atom attached to an OH group.

Alcohol has a constant vapor pressure.

All alcohols are toxic to some degree.

Alcoholic beverages are made by the fermentation of sugar by yeast.

Starches can be changed into sugar by malting.

Alcohol can be produced by destructive distillation.

OBJECTIVES (continued)

he nature of alcohol and to give a realistic concept of its use as a beverage.

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into sugar by malting.

y destructive distillation.

OBJECTIVES (continued)

Alcohol is oxidized only in the liver.

No digestion of alcohol is necessary.

The greatest effect of alcohol on the body is the depressant action on the nervous system.

Alcohol affects the brain in a precise pattern.

The heart rate is increased by alcohol.

The effects of alcohol vary because of several factors.

Prolonged use of alcohol may encourage deterioration of health.

OBJECTIVES

SKILLS

To develop the ability to discriminate between fact and fiction.

To develop the ability to critique audiovisual and printed materials with

To differentiate between use, misuse, and abuse of alcohol, tobacco, and d

To promote understanding of the scope and nature of their use and abuse on

To increase the knowledge of federal and state regulations regarding the u

To develop a sense of personal worth and integrity.

To exercise control as well as freedom of verbal and non-verbal expressi

To increase the self-awareness of mental and physical conditions, feelings,

To develop decision-making skills.

To develop the appreciation of and respect for the decisions of others.

To take notes.

To promote discussion.

To promote library usage.

To promote organization of ideas and concepts into logical patterns.

To increase facility in handling new vocabulary.

OBJECTIVES

SKILLS

y to discriminate between fact and fiction.

y to critique audiovisual and printed materials with objectivity.

een use, misuse, and abuse of alcohol, tobacco, and drugs.

ing of the scope and nature of their use and abuse on family and community life.

edge of federal and state regulations regarding the use of alcohol, tobacco, and drugs.

personal worth and integrity.

s well as freedom of verbal and non-verbal expressions of emotions and behavior.

awareness of mental and physical conditions, feelings, and sensations.

aking skills.

iation of and respect for the decisions of others.

.

age.

on of ideas and concepts into logical patterns.

in handling new vocabulary.

OBJECTIVES (continued)

ATTITUDES

Student

To develop within the individual student a wholesome outlook on the use of sub prejudice; an attitude founded on thought and self-realization of the individu bility of his own actions.

To develop in the student the understanding of his responsibilities to himsel community, and the society which controls and influences him.

To develop an appreciation for maintaining good health habits.

To develop an appreciation for maintaining good health habits.

Habits are learned, not inborn, and now is the time to learn good ones.

To understand their personal needs and how they can be fulfilled without reso tobacco, and drugs.

To develop and understand the effects of alcohol, tobacco, and drugs on the wa

To develop in the student the realization that one's life can be more satisfy active interest in others.

To develop an understanding of the scope of the problem and the cause of the

To develop the understanding in the student that he does not need tobacco, al achieve a sense of belonging, status, or to meet other emotional needs.

To promote discriminate use of alcohol, drugs, and tobacco.

To understand and appreciate the human body.

To understand the problems of the human body.

To develop a good understanding of what society accepts about alcohol, drugs,

To develop a realization of the hazards of social influences that lead to alc tobacco abuse.

OBJECTIVES (continued)

ATTITUDES

ual student a wholesome outlook on the use of subject without bias or
d on thought and self-realization of the individual assuming the responsi-

understanding of his responsibilities to himself, his family, his
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e effects of alcohol, tobacco, and drugs on the way people live.

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of the scope of the problem and the cause of the conditions.

in the student that he does not need tobacco, alcohol, and drugs to
, status, or to meet other emotional needs.

of alcohol, drugs, and tobacco.

the human body.

of the human body.

ding of what society accepts about alcohol, drugs, and tobacco.

the hazards of social influences that lead to alcohol, drugs, and

OBJECTIVES (continued)

To aid the child to make use of his senses in improving his power of discrimination.

To help the student make the correct decisions when under pressures and temptations.

Teacher

Respect the opinions of all of your students; do not let them turn you off.

Avoid scare technique.

Avoid the head-on approach of an attitude you want to change.

Don't fake answers, be prepared to say, "I don't know."

Keep lines of communication open.

Approach changing attitudes through the subtle and unconscious approach.

Do not moralize or preach about the evils of using drugs, alcohol, or tobacco; outline the facts and let the students make their own decisions.

TEACHING HINTS FOR SLOW AND RAPID LEARNERS

Slow

Set activities should be maintained while allowing for variation.

Start with a formal routine opening.

Mix: formal-informal, active and quiet, group and individual.

Cartoon materials are very good to keep pupil interest.
Tane Press material is cartoon oriented.

Arouse curiosity with small buzz groups, material that is on his level of rea

Have students collect newspaper articles related to alcohol, drugs, and toba

Fast

Assign more advanced material for reports such as: reading why alcohol, dru

Interview A.A., law enforcement, and American Cancer Society people and repo

Set up panel discussions on alcohol, drugs, and tobacco.
- Crime associated with these
- Social problems
- Family problems

TEACHING HINTS FOR SLOW AND RAPID LEARNERS

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aterial for reports such as: reading why alcohol, drugs, and tobacco are abused.

nforcement, and American Cancer Society people and report on these interviews.

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with these

TOBACCO

Concepts	Teacher Materials
I. Smoking is the nation's number one leading habit. It is started oftentimes early in life. All habits are started by making a decision. This unit will be concerned with tobacco and its many ramifications.	"Smoking - The Great Dilemma" "What We Know About Children and Smoking" Film: "Cigarettes and Health, Challenge to Educators"
A. The past history of tobacco has led it to be a serious habit.	"Summaries and Conclusions - Smoking or Health - Report of the Advisory Committee to the Surgeon General" Tobacco and Health, A Handbook for Teachers
B. People are lead and motivated to smoke for many reasons. (influencing factors)	"Cigarettes and the Schools"

	Teacher Materials	Student Materials
number s started . All king a l be con- its many	"Smoking - The Great Dilemma" "What We Know About Children and Smoking" Film: "Cigarettes and Health, Challenge to Educators"	"My Dear, This'll Kill You"
tobacco serious	"Summaries and Conclusions - Smoking or Health - Report of the Advisory Committee to the Surgeon General" *Tobacco and Health, A Handbook for Teachers*	"Smoking - It's Up To You"
moti- many ing	"Cigarettes and the Schools"	"Here Is The Evidence, You Be The Judge"

Audio Visual	Motivating Questions
Posters: Decision, Decision, Decision ...	What habits do you have which affect the everyday behavior of your life?
Is It Worth It? Filmstrip w/record: "Smoking or Health"	How did you acquire these habits? a. constant repetition b. by repeating it once or twice
	Are all habits bad?
	Are habits related to decisions? How?
Films: "Smoking: Past and Present"	What factors do you feel had a great impact on tobacco as a major product for consumption?
	Do you feel the information we have on tobacco today about its effects were known 100 years ago and that the tobacco industry would be one of the nation's leading businesses today?
	Did tobacco people really know what they were doing when they set up factories?
"The Huffless, Puffless Dragon" "A Time For Decision"	Did the history of the South lead to the present use of tobacco on such a large scale?

	Motivating Questions	Activities
Decision ...	What habits do you have which affect the everyday behavior of your life?	
	How did you acquire these habits? a. constant repetition b. by repeating it once or twice	
	Are all habits bad?	
	Are habits related to decisions? How?	
Present"	What factors do you feel had a great impact on tobacco as a major product for consumption?	
	Do you feel the information we have on tobacco today about its effects were known 100 years ago and that the tobacco industry would be one of the nation's leading businesses today?	Have students research tobacco to find reasons why it became the nation's leading habit.
	Did tobacco people really know what they were doing when they set up factories?	
fless Dragon"		
on"	Did the history of the South lead to the present use of tobacco on such a large scale?	

Concepts	Teacher Materials
II. In the chemical make-up of cigarettes, there are numerous chemicals which are harmful to one's body.	"Summary and Conclusion, Smoking and Health - Report of the Advisory Committee to the Surgeon General" Tobacco and Health, A Handbook for Teachers

	Teacher Materials	Student Materials
ake-up of are numerous re harmful	"Summary and Conclusion, Smoking and Health - Report of the Advisory Committee to the Surgeon General" Tobacco and Health, A Handbook for Teachers	"The Cigarette, A Dubious Companion"

Audio Visual	Motivating Questions	Activities
Posters: Anti-Smoking Pro-Smoking	From personal observation, why do you think people smoke?	Have the studen people who smok responses to th for discussion.
	What methods do television commercials use to sell their cigarettes? Is the propaganda one-sided?	Collect cigaret ments from news zines and discu
	Do you feel the ads for cigarettes tell the truth about cigarettes and its real effect on the human body?	Discuss the ant campaigns now s vision and in t and magazines.
		Make posters wh in the campaign and display the finished.
	What are the most common substances found in tobacco smoke?	Have students r chemical make-u and discuss the
	Why do you feel that some brands have tar and nicotine content listed on the package?	Use the mechani machine.
	Do you feel that one of the reasons why some people smoke pipes is to cut down on the amount of tars and nicotines?	
	What effect do filters have on the amount of tars and nicotine that is consumed in one's lungs?	

Motivating Questions	Activities
From personal observation, why do you think people smoke?	Have the students question people who smoke and bring responses to the classroom for discussion.
What methods do television commercials use to sell their cigarettes? Is the propaganda one-sided?	Collect cigarette advertisements from newspapers and magazines and discuss their influence.
Do you feel the ads for cigarettes tell the truth about cigarettes and its real effect on the human body?	Discuss the anti-smoking campaigns now seen on television and in the newspapers and magazines.
	Make posters which will help in the campaign against smoking and display them when they are finished.
What are the most common substances found in tobacco smoke?	Have students research the chemical make-up of cigarettes and discuss their findings.
Why do you feel that some brands have tar and nicotine content listed on the package?	Use the mechanical smoking machine.
Do you feel that one of the reasons why some people smoke pipes is to cut down on the amount of tars and nicotines?	
What effect do filters have on the amount of tars and nicotine that is consumed in one's lungs?	

	Concepts	Teacher Materials
III.	Through clinical research it has been found that smoking is injurious to the health of the human body.	"Cancer Invades the Beleaguered Lungs"
	A. Cancer	Tobacco and Health, A Handbook for Teachers Cancer Statistics for 1970 Cancer Word Book
	B. Respiratory Disease	"Emphysema" "Cigarette Smoking - Chronic Bronchitis and Emphysema"
	C. Heart Disease - Others	"The Facts About Smoking and Health"
IV.	It has been shown that smoking is hazardous to health and vast amounts of action is being taken to educate the public.	"Cigarettes - America's No. 1 Public Health Problem"

d)

	Teacher Materials	Student Materials
ical research it nd that smoking s to the health of dy.	"Cancer Invades the Beleaguered Lungs"	"Cancer of the Larynx"
	Tobacco and Health, A Handbook for Teachers	
	Cancer Statistics for 1970	
	Cancer Word Book	
tory Disease	"Emphysema"	"Shortness of Breath, The Facts"
	"Cigarette Smoking - Chronic Bronchitis and Emphysema"	"Chronic Bronchitis, The Facts"
isease - Others	"The Facts About Smoking and Health"	"Where There's Smoke, There's Danger From Heart Disease"
		"What Everybody Should Know About Smoking and Heart Disease"
shown that smoking s to health and vast action is being taken the public.	"Cigarettes - America's No. 1 Public Health Problem"	"U.S. Government Wants You To Know"

Audio Visual	Motivating Questions	Activities
Film: "Is Smoking Worth It?" (A report to youth)	Have you ever witnessed someone whose health was impaired as a result of smoking?	Use the manik discussion on of tars and n
Poster: Cancer Poster		
Filmstrip: "Nature's Filter"	Do you feel that smoking does cause cancer?	Discuss the p the materials lungs.
	Do you feel that all the talk about cancer is a scare tactic?	
	What are some examples of life situations that may lead you to believe that smoking is bad for the respiratory system?	Demonstration "The Smoking Experiments"
Films:	In what way does smoking cause breathing problems?	
"Smoking and You"		
"Tobacco and the Human Body"	What effect does nicotine and tar have on the heart?	Use the smoki demonstrate t found in ciga
	When smoking a cigarette, is there an immediate effect on the heart?	
	What types of heart diseases are often associated with smoking?	
"Getting Through"	What new type of cigarette ads do you see on T.V.?	Have students smoking ads.
	What is the message that these new ads are trying to project?	Review televi commercials.
Poster: I Don't Smoke	Why was the Advisory Committee to the Surgeon General formed? By whose request? When?	Research conc money spent c and compare t

	Motivating Questions	Activities
	Have you ever witnessed someone whose health was impaired as a result of smoking?	Use the manikin to stimulate discussion on the collection of tars and nicotine in the lungs.
	Do you feel that smoking does cause cancer?	Discuss the possible dangers of the materials collecting in the lungs.
	Do you feel that all the talk about cancer is a scare tactic?	
	What are some examples of life situations that may lead you to believe that smoking is bad for the respiratory system?	Demonstration: #1 "The Smoking and Health Experiments"
	In what way does smoking cause breathing problems?	
ody"	What effect does nicotine and tar have on the heart?	Use the smoking machine to demonstrate the residue found in cigarette smoke.
	When smoking a cigarette, is there an immediate effect on the heart?	
	What types of heart diseases are often associated with smoking?	
	What new type of cigarette ads do you see on T.V.?	Have students discuss the anti-smoking ads.
	What is the message that these new ads are trying to project?	Review television anti-smoking commercials.
	Why was the Advisory Committee to the Surgeon General formed? By whose request? When?	Research concerning amount of money spent on tobacco in 1969 and compare this amount with that

TOBACCO (continued)

Concepts	Teacher Materials	Studen

Teacher Materials	Student Materials

Audio Visual	Motivating Questions	Activiti
	Who was on this committee?	spent o and chu
	What work is being done by the American Cancer Society and the American Heart Association to inform people about smoking?	Organiz discuss the Ame
	Smoking is a costly habit. Is it worth it?	

Motivating Questions	Activities
Who was on this committee?	spent on education, highways, and churches.
What work is being done by the American Cancer Society and the American Heart Association to inform people about smoking?	Organize a student panel discussion on "The Work fo the American Heart Association."
Smoking is a costly habit. Is it worth it?	

V. TEACHER INFORMATION

DISEASES DIRECTLY RELATED TO SMOKING

A. Cancer
  1. Lung
  2. Larynx (voice box)
  3. Lip
  4. Esophagus
  5. Mouth
  6. Pharynx (throat)
  7. Cheek
  8. Urinary bladder

B. Respiratory Diseases
  1. Chronic bronchitis
  2. Emphysema
  3. Chronic bronchopulmonary

C. Cardiovascular Diseases
  1. Coronary artery disease
  2. Coronary heart disease
  3. Buerger's disease

D. Others
  1. Peptic ulcer
  2. Sinusitis

VI. GLOSSARY

ammonia	Colorless, pungent gas compound of nitrogen and hydrogen--NH_3; medicine, and as a strong cleaning fluid
arsenic	a silvery-white, brittle, very poisonous chemical; compounds of insecticides, glass, medicines; arsenic trioxide has no taste
cancer	a malignant growth of tissue, usually ulcerating, tending to sp general ill health; a carcinoma or sarcoma
carbon monoxide	compound of carbon and oxygen; given off in car exhaust; produc combustion of any carbonaceous material
carcinoma	any of several kinds of epithelial cancer
Cardiac	of or near the heart; relating to the upper part of the stomac
cardiovascular disease	disease of the vessels of the heart
cell	small microscopic mass of protoplasm; performs life functions
chronic bronchitis	inflammation of the bronchial tubes; continuing for a long time
cilia	hairlike process found on many cells; capable of vibratory or l
coronary	pertaining to either of two arteries--right or left--which aris tissue of the heart
coronary artery disease	disease of the above mentioned arteries
decision	the act of making up one's mind; a judgment or conclusion reach deciding or settling a question
depressant	lowering the rate of muscular or nervous activity
emphysema	an abnormal swelling of the alveoli of the lungs or the tissue

VI. GLOSSARY

Colorless, pungent gas compound of nitrogen and hydrogen—NH_3; used in fertilizers, medicine, and as a strong cleaning fluid

a silvery-white, brittle, very poisonous chemical; compounds of it are used in making insecticides, glass, medicines; arsenic trioxide has no taste

a malignant growth of tissue, usually ulcerating, tending to spread, and associated with general ill health; a carcinoma or sarcoma

compound of carbon and oxygen; given off in car exhaust; produced by the incomplete combustion of any carbonaceous material

any of several kinds of epithelial cancer

of or near the heart; relating to the upper part of the stomach

disease of the vessels of the heart

small microscopic mass of protoplasm; performs life functions

inflammation of the bronchial tubes; continuing for a long time

hairlike process found on many cells; capable of vibratory or lashing movement

pertaining to either of two arteries—right or left—which arise from the aorta to supply tissue of the heart

disease of the above mentioned arteries

the act of making up one's mind; a judgment or conclusion reached or given; the act of deciding or settling a question

lowering the rate of muscular or nervous activity

an abnormal swelling of the alveoli of the lungs or the tissue connecting the alveoli

GLOSSARY (continued)

	of the lungs
formaldehyde	poison frequently used as a disinfectant
habit - custom - practice	an inclination for an action acquired by repetition
hazard	risk; danger; peril
hydrogen cyanide	poisonous gas; used in execution of criminals
hydrogen sulfide	poisonous gas; smell of rotten eggs (Yellowstone Park)
insecticide	preparation for destroying insects
lung cancer	cancer of the lungs
maturity	state or quality of being developed
nicotine	$C_{10}H_{14}N_2$--colorless, oily poison used as insecticide; leaves
sarcoma	form of cancer arising from nonepithelial tissue such tissue, cartilage or bone
stimulant	something which arouses or excites--spurs on
tar	material that stains the inside of a smoker's lungs a thick, sticky brown to black liquid with a pungent od distillation of wood, peat, shale; tars are produced derivatives; used in preserving surfaces and organic
tobacco	products such as cigars, cigarettes, and snuff prepar plant which belongs to the nightshade family

GLOSSARY (continued)

ıngs

requently used as a disinfectant

ıation for an action acquired by repetition

nger; peril

s gas; used in execution of criminals

s gas; smell of rotten eggs (Yellowstone Park)

ion for destroying insects

f the lungs

quality of being developed

e--colorless, oily poison used as insecticide; stimulant drug; found in tobacco

cancer arising from nonepithelial tissue such as connecting tissue, lymphalic
cartilage or bone

ng which arouses or excites--spurs on

l that stains the inside of a smoker's lungs and acts as a slow tissue poison;
sticky brown to black liquid with a pungent odor; obtained by the destructive
ation of wood, peat, shale; tars are produced of hydrocarbons and their
ives; used in preserving surfaces and organic compounds

s such as cigars, cigarettes, and snuff prepared from the leaves of the tobacco
hich belongs to the nightshade family

DRUGS

	Concepts	Teacher Materials	Stud
I.	A. To follow up sixth grade curriculum	A variety of materials to bring forth these concepts from different point of view	Mater can u get t and a
	B. To give students a good biological understanding of drugs and terms		
	C. To saturate students with terms, proper use and misuse they will encounter		
	D. So students can make an intelligent decision as to what they want to do		
	E. To expose them to all terms and drugs of use and misuse		
II.	Terms (define for students)	"The Up and Down Drugs"	Drug for T
	A. Drugs	"Let's Talk About Drugs"	"Livi
	B. Drug dependency	Drug Abuse Education	"Fact
	1. physical 2. psychological 3. addiction 4. habituation	"Fact Sheets" "Barbiturates"	"Stud (F
		"Young Scientists Look at Drugs"	"Drug Cop-C
	C. Illusion	"How Safe Are Our Drugs"	
	D. Hallucination	"Drugs and Your Body"	
	E. Withdrawal sickness		

	Teacher Materials	Student Materials
ixth grade ts a good erstanding erms udents with use and misuse ounter n make an ecision as to to do n to all terms use and misuse	A variety of materials to bring forth these concepts from different point of view	Materials that the students can understand the use to get the proper idea on use and abuse
r students) cy ical on ckness	"The Up and Down Drugs" "Let's Talk About Drugs" Drug Abuse Education "Fact Sheets" "Barbiturates" "Young Scientists Look at Drugs" "How Safe Are Our Drugs" "Drugs and Your Body"	Drug Abuse - A Source Guide for Teachers "Living Death" "Fact Sheets" "Students and Drug Abuse" (Reprint) "Drug Abuse: The Chemical Cop-Out" (Good for research)

Audio Visual	Motivating Questions	Activitie
Films to put forth these concepts Filmstrips that will bring out the true facts Transparencies to help support all of these points	Why are drugs misused? Does it do any harm to discuss drug misuse and abuse? Do people start abusing drugs through ignorance? What do we mean by the drug problem? When a person abuses or uses drugs illegally, is it only his business or the concern of everyone?	Do bulleti following Diffe Reaso How or u
Film: "Drugs and the Nervous System" Transparencies: "Comparison of different units of measure" D-7 - #1 - #5	How do drugs affect our lives? What stimulants or depressants have you taken or come in contact with? Have you ever seen an illusion? Do you know anyone who is psychologically addicted to drugs or anything? What is drug use? What do abuse, misuse, habituation, and dependency mean?	Do bulleti Drug by s have Diff illu

	Motivating Questions	Activities
s	Why are drugs misused?	Do bulletin boards on the following subjects:
he	Does it do any harm to discuss drug misuse and abuse?	Different drugs
ll	Do people start abusing drugs through ignorance?	Reason against abuse
	What do we mean by the drug problem?	How drugs are obtained or used illegally
	When a person abuses or uses drugs illegally, is it only his business or the concern of everyone?	
	How do drugs affect our lives?	Do bulletin boards showing:
	What stimulants or depressants have you taken or come in contact with?	Drugs that have been used by students or that students have been exposed to
	Have you ever seen an illusion?	Different ideas between illusion and hallucination
	Do you know anyone who is psychologically addicted to drugs or anything?	
	What is drug use?	
	What do abuse, misuse, habituation, and dependency mean?	

DRUGS (continued)

Concepts	Teacher Materials	Stude
F. Psychotic	"Living Death" (very good on withdrawal)	
G. Medical uses		
H. Relationship of milligram-microgram	"Students and Drug Abuse" (Reprint)	
I. Depressant	"Drug Abuse: The Chemical Cop-Out"	
J. Stimulant		
K. Hallucinogen		
III. Hallucinogens	Drugs From A-Z, A Dictionary	"Why
A. Marijuana	Marijuana	Mariju on re
1. Effects on the body	Marijuana: Social Benefit or Social Detriment	Drugs
a. physical b. psychological	"The Dangers of Marihuana: Facts You Should Know"	Drug A For Te
2. Legal use (if any)		
3. Illegal use or abuse (Is there much general abuse?)	"Have You Ever Been Convicted of a Felony? (Reprint)	"What
4. Method taken and dosage	"Restricted Drugs: For Use by Law Enforcement Agencies"	
5. Slang terms	"What About Marijuana?"	
6. Most common type abused	"Narcotics and Dangerous Drugs"	
7. Identification	Drug Abuse - A Source Guide For Teachers	

	Teacher Materials	Student Materials
	"Living Death" (very good on withdrawal)	
illogram-	"Students and Drug Abuse" (Reprint)	
	"Drug Abuse: The Chemical Cop-Out"	
	Drugs From A-Z, A Dictionary	"Why Not Marijuana?"
	Marijuana	Marijuana (a good research on reports by students)
e body	Marijuana: Social Benefit or Social Detriment	Drugs From A-Z, A Dictionary
ical	"The Dangers of Marihuana: Facts You Should Know"	Drug Abuse - A Source Guide For Teachers
any)		
r abuse (Is eneral abuse?)	"Have You Ever Been Convicted of a Felony? (Reprint)	"What About Marijuana?"
and dosage	"Restricted Drugs: For Use by Law Enforcement Agencies"	
	"What About Marijuana?"	
ype abused	"Narcotics and Dangerous Drugs"	
n	Drug Abuse - A Source Guide For Teachers	

Audio Visual	Motivating Questions	Activitie
	Why do people abuse drugs? What is tolerance?	
Film: "Marihuana" Filmstrips: "Why Not Marijuana?" "Marijuana: What Can You Believe?" Winston Identification Kit Folder: "Drugs of Abuse" (Good for identification of all drugs) Transparencies: D-7 - #6, #7-#12	How does marijuana affect you physically? Why do people use marijuana? What are the effects of constant, long-term use? How is it obtained? In U.S.? By pusher? By user? How is it used by abuser? Do certain types of people use it? If anyone uses it, do they become stereotyped, or is it an actuality? What area of the body does it affect the most?	Have stu bulletin for mari Give ext work for Have "bu Marijuan Have rep (Probabl presente

	Motivating Questions	Activities
	Why do people abuse drugs?	
	What is tolerance?	
	How does marijuana affect you physically?	Have students organize a bulletin board on slang terms for marijuana.
	Why do people use marijuana?	
juana?"	What are the effects of constant, long-term use?	Give extra credit for extra work for posters on marijuana.
hat Can You		Have "buzz" groups on "Alcohol, Marijuana, Which Is Worse?" Have reports on discussions. (Probably use after you have presented most of the material.)
ion Kit gs of Abuse" ntification of	How is it obtained? In U.S.? By pusher? By user?	
	How is it used by abuser?	
	Do certain types of people use it?	
-#12	If anyone uses it, do they become stereotyped, or is it an actuality?	
	What area of the body does it affect the most?	

DRUGS (continued)

Concepts	Teacher Materials	St
8. Where obtained	"Why Not Marijuana?"	
a. drug itself b. traffic to U.S. or city	"Marijuana - Some Questions and Answers"	
9. Value to individual		
10. Results from long-term use		
B. LSD - rye plant fungus (ergot)	"LSD: The False Illusion"	"L
1. Effects on the body	The LSD Story	Dr
a. physical b. psychological	"LSD: Trip or Trap?"	"Na
	Drugs: A-Z Dictionary	
2. Legal use (if any)	Drug Abuse - A Source Guide For Teachers	
3. Illegal use or abuse (Is there much general abuse?)	"Narcotics and Dangerous Drugs"	
4. Method taken and dosage		
5. Slang terms		
6. Most common type abused		
7. Identification		
8. Where obtained		
a. drug itself		

	Teacher Materials	Student Materials
obtained	"Why Not Marijuana?"	
ug itself raffic to U.S. or ity	"Marijuana - Some Questions and Answers"	
to individual		
ts from long-term		
plant fungus (ergot)	"LSD: The False Illusion"	"LSD: Trip or Trap?"
ts on the body	The LSD Story	Drugs: A-Z Dictionary
hysical sychological	"LSD: Trip or Trap?"	"Narcotics and Dangerous Drugs"
	Drugs: A-Z Dictionary	
use (if any)	Drug Abuse - A Source Guide For Teachers	
gal use or abuse (Is much general ?)	"Narcotics and Dangerous Drugs"	
d taken and dosage		
g terms		
common type abused		
tification		
e obtained		
drug itself		

Audio Visual	Motivating Questions	Activities
	Is there a case for legalization of marijuana?	
	Does it build up a tolerance?	
Film: "LSD"	Does it cause physical or psychological dependency?	Have students r the effects can
Filmstrips:	Where do we get LSD?	Do a bulletin b about people wh
"LSD: The Acid World"	What is the true name of LSD?	
"LSD: Trip or Trap?"	What does it look and taste like?	
Transparencies:	Does it come in different forms?	
"Example of Comparison"	What does an LSD trip amount to?	
D-7 - #13-#16, #17	Is it the strongest of the hallucinogens?	
Winston Identification Kit	What effect of LSD causes it to be abused?	
	Can a person die from an overdose?	
	Is tolerance built up?	

	Motivating Questions	Activities
	Is there a case for legalization of marijuana?	
	Does it build up a tolerance?	
	Does it cause physical or psychological dependency?	Have students report on how the effects can be harmful.
	Where do we get LSD?	Do a bulletin board on articles about people who have taken LSD.
ld"	What is the true name of LSD?	
?"	What does it look and taste like?	
	Does it come in different forms?	
son"	What does an LSD trip amount to?	
t	Is it the strongest of the hallucinogens?	
	What effect of LSD causes it to be abused?	
	Can a person die from an overdose?	
	Is tolerance built up?	

Concepts	Teacher Materials	Student
b. traffic to U.S. or city		
9. Value to individual		
10. Results from long-term use		
C. Mescaline (peyote cactus)	"Narcotics and Dangerous Drugs"	*Drugs:*
1. Effects on the body	*Drugs: A-Z Dictionary*	
a. physical b. psychological	"Fact Sheets"	
2. Legal use (if any)		
3. Illegal use		
4. Method taken		
5. Slang terms		
6. Identification		
7. Where obtained		
D. STP - Dom	"Narcotics and Dangerous Drugs"	*Drugs:*
1. Effects on the body	*Drugs: A-Z Dictionary*	
a. physical b. psychological	*Drug Abuse Education*	
2. Illegal use (Is it commonly abused?)	*Drug Abuse - A Source Guide For Teachers*	

	Teacher Materials	Student Materials
fic to U.S. or		
individual		
from long-term use		
peyote cactus)	"Narcotics and Dangerous Drugs"	Drugs: A-Z Dictionary
on the body	Drugs: A-Z Dictionary	
sical chological	"Fact Sheets"	
se (if any)		
use		
taken		
erms		
ication		
btained		
	"Narcotics and Dangerous Drugs"	Drugs: A-Z Dictionary
s on the body	Drugs: A-Z Dictionary	
ysical ychological	Drug Abuse Education	
l use (Is it ly abused?)	Drug Abuse - A Source Guide For Teachers	

Audio Visual	Motivating Questions	Activities
Winston Identification Kit Transparency: D-7 - #17	What are some of its uses? Does it have the same effects as LSD and is the trip of the same duration? Is there long range problems from use?	
Winston Identification Kit Transparency: .D-7 - #17	How much use is there in the United States? How does it compare to LSD?	

DRUGS (continued)

Concepts	Teacher Materials	Student
3. Slang terms		
4. Where obtained		
E. Psilocybin	"Narcotics and Dangerous Drugs"	Drugs:
1. Effects on the body	Drugs: A-Z Dictionary	
a. physical b. psychological	Drug Abuse Education	
	Drug Abuse - A Source Guide For Teachers	
2. Illegal use		
3. Slang terms		
4. Where obtained		
5. Use (purpose)		
IV. Depressants	"Let's Talk About Pep Pills and Goof Balls"	"Let's and Goo
A. Barbiturates (Barbituric acid)	Drugs: A-Z Dictionary	Drugs:
1. Effects on the body	"Narcotics and Dangerous Drugs"	"Barbitu
a. physical b. psychological	"The Up and Down Drugs"	"The Up
2. Legal and medical use	Drug Abuse Education	Drug Abu For Teac
3. Illegal use or and abuse (Is there much general abuse?)	"Fact Sheets"	
	"Barbiturates"	
4. Method taken and dosage		

Teacher Materials	Student Materials
"Narcotics and Dangerous Drugs"	Drugs: A-Z Dictionary
Drugs: A-Z Dictionary	
Drug Abuse Education	
Drug Abuse - A Source Guide For Teachers	
"Let's Talk About Pep Pills and Goof Balls"	"Let's Talk About Pep Pills and Goof Balls"
Drugs: A-Z Dictionary	Drugs: A-Z Dictionary (reports)
"Narcotics and Dangerous Drugs"	"Barbiturates" (reports)
"The Up and Down Drugs"	"The Up and Down Drugs" (reports)
Drug Abuse Education	Drug Abuse - A Source Guide For Teachers (reports)
"Fact Sheets"	
"Barbiturates"	

Audio Visual	Motivating Questions	Activities
Winston Identification Kit	How and why is it used by natives?	
Transparency: D-7 - #17	Why do the native Indians of South America use it?	
Filmstrip: "Let's Talk About Pep Pills and Goof Balls"	What effects of barbiturates cause them to be abused?	Have student effects of b and overdose
Drugs of Abuse Folder for Identification	Do barbiturates cause physical and psychological addiction?	
Winston Identification Kit	What are the medical uses of tranquilizers and barbiturates?	
Transparencies: D-7 - #18-#21	What is withdrawal from barbiturates like?	
	Can a person die from an overdose?	
	What are some long range results from abuse of barbiturates?	

	Motivating Questions	Activities
n Kit	How and why is it used by natives?	
#17	Why do the native Indians of South America use it?	
lk About Pep Pills Balls"	What effects of barbiturates cause them to be abused?	Have students report on the effects of barbiturates, legal, and overdose illegal.
for Identifica-	Do barbiturates cause physical and psychological addiction?	
n Kit	What are the medical uses of tranquilizers and barbiturates?	
- #18-#21	What is withdrawal from barbiturates like?	
	Can a person die from an overdose?	
	What are some long range results from abuse of barbiturates?	

DRUGS (continued)

Concepts	Teacher Materials	Student
5. Slang terms	Drug Abuse - A Source Guide For Teachers	
6. Most common type abused		
7. Identification		
8. Where obtained		
a. legally b. illegally		
9. Value to individual		
B. Narcotics	"The Life Cycle of a Narcotic Addict"	"Fact
1. Opiates	"Fact Sheets"	Drugs:
a. Opium	"Narcotic Drug Addiction"	"Narco and An
(1) Effects on the body	"Narcotics and Dangerous Drugs"	
(a) physical (b) psychological	Drug Abuse - A Source Guide For Teachers	
	Drugs: A-Z Dictionary	
(2) Legal use (if any)	"Narcotics - Some Questions and Answers"	
(3) Illegal use (is there common abuse?)	"The Control and Treatment of Narcotics Use"	
(4) Method taken and dosage		
(5) Slang terms		

	Teacher Materials	Student Materials
terms	Drug Abuse - A Source Guide For Teachers	
ommon type abused		
ification		
obtained		
egally llegally		
to individual		
	"The Life Cycle of a Narcotic Addict"	"Fact Sheets" (reports)
es	"Fact Sheets"	Drugs: A-Z Dictionary
pium	"Narcotic Drug Addiction"	"Narcotics - Some Questions and Answers"
1) Effects on the body	"Narcotics and Dangerous Drugs"	
(a) physical (b) psychological	Drug Abuse - A Source Guide For Teachers	
	Drugs: A-Z Dictionary	
(2) Legal use (if any)		
(3) Illegal use (is there common abuse?)	"Narcotics - Some Questions and Answers"	
	"The Control and Treatment of Narcotics Use"	
(4) Method taken and dosage		
(5) Slang terms		

Audio Visual	Motivating Questions	Activi
	What happens if I take barbiturates and amphetamines at the same time?	
Film: "Pit of Despair" Winston Identification Kit Transparencies: D-7 - #22-#28	What effects of narcotics cause them to be abused? What are the medical uses of opium? What are the long range problems developed through use of opium? How is opium taken? Is there any use in the United States? (today or yesterday) Does it cause physical and psychological addiction?	Have on "T (each

	Motivating Questions	Activities
	What happens if I take barbiturates and amphetamines at the same time?	
ir"	What effects of narcotics cause them to be abused?	Have students research and report on "The History of Narcotics." (each individual drug)
on Kit - #22-#28	What are the medical uses of opium?	
	What are the long range problems developed through use of opium?	
	How is opium taken?	
	Is there any use in the United States? (today or yesterday)	
	Does it cause physical and psychological addiction?	

Concepts	Teacher Materials	Student Materials
(6) Identification		
(7) Where obtained		
(8) Derivatives		
b. Morphine (derived from opium)	Same as for opium	Same as for opium
(1) Effect on the body		
(a) physical (b) psychological		
(2) Legal use		
(3) Illegal use or abuse		
(4) Method taken (abuse)		
(5) Slang terms		
(6) So commonly abused		
(7) Identification		
(8) Where obtained		
(a) drug itself (b) traffic in U.S. or city		
(9) Value to individual		

Audio Visual	Motivating Questions	Activiti
Winston Identification Kit		
Transparencies:	Does morphine cause physical addiction?	Have stu a bullet is used
D-7 - #23		
D-7 - #25, #26	Are there medical uses for morphine?	
	Is it a good pain killer?	
	How does it compare to the other opiates?	
	What are the physical effects after use of morphine?	
	What causes it to be abused?	

	Motivating Questions	Activities
n Kit		
	Does morphine cause physical addiction?	Have students report or make a bulletin board on why morphine is used as a medical drug.
	Are there medical uses for morphine?	
	Is it a good pain killer?	
	How does it compare to the other opiates?	
	What are the physical effects after use of morphine?	
	What causes it to be abused?	

Concepts	Teacher Materials	Student Materials
c. Heroin (derived from opium)	Same as for opium	Same as for opium
(1) Effects on the body		
(a) physical (b) psychological		
(2) Legal use		
(3) Illegal use or abuse		
(4) Method taken (abuse)		
(5) Slang terms		
(6) Identification		
(7) Where obtained		
(a) drug itself (b) traffic in U.S. or city		
(8) Value to individual		
d. Codeine (derived from opium)	Same as for opium	Same as for opium
(1) Effects on the body		

Audio Visual	Motivating Questions	Activit
Winston Identification Kit Transparencies: D-7 - #27-#29	Are there any uses of heroin medically?	Have st on effe
	Is heroin stronger than morphine?	
	Does it cause physical addiction?	Have st board o addicti or to t
	How is heroin abused most often?	
	What is a fix?	
	What is a kit?	
	What are some of the implements necessary to use heroin?	
	Why would a person turn to heroin?	
	How much does the heroin habit cost? (Does it cost more than money?)	
	How was heroin used and abused during the Civil War?	
	Which is worse, heroin or LSD?	
	Have you ever taken codeine?	
	What is the most common medical use for codeine?	

	Motivating Questions	Activities
on Kit	Are there any uses of heroin medically?	Have students make posters on effects, sources
- #27-#29	Is heroin stronger than morphine?	Have students make bulletin board on problem that heroin addiction brings to a community or to the individual.
	Does it cause physical addiction?	
	How is heroin abused most often?	
	What is a fix?	
	What is a kit?	
	What are some of the implements necessary to use heroin?	
	Why would a person turn to heroin?	
	How much does the heroin habit cost? (Does it cost more than money?)	
	How was heroin used and abused during the Civil War?	
	Which is worse, heroin or LSD?	
	Have you ever taken codeine?	
	What is the most common medical use for codeine?	

Concepts	Teacher Materials
(a) physical	
(b) psychological	
(2) Legal and medical use	
(3) Illegal use or abuse	
(4) Method taken (abuse)	
(5) Slang terms	
(6) Identification	
(7) Where obtained	
(a) drug itself	
(b) traffic in U.S. or city	
e. Percodan	Drugs: A-Z Dictionary
f. Demerol	Drug Abuse - A Source Guide For Teachers
g. Methadone	"Narcotics and Dangerous Drugs"
*h. Alcohol	*Will be expanded in a separate section
V. Volatile Chemicals	"Glue Sniffing: Big Trouble In A Tube"
A. Most common types abused	

ued)

	Teacher Materials	Student Materials
(a) physical (b) psychological		
(2) Legal and medical use		
(3) Illegal use or abuse		
(4) Method taken (abuse)		
(5) Slang terms		
(6) Identification		
(7) Where obtained		
(a) drug itself (b) traffic in U.S. or city		
e. Percodan	Drugs: A-Z Dictionary	
f. Demerol	Drug Abuse - A Source Guide For Teachers	
g. Methadone	"Narcotics and Dangerous Drugs"	
*h. Alcohol	*Will be expanded in a separate section	
e Chemicals	"Glue Sniffing: Big Trouble In A Tube"	"Glue Sniffing: Big Trouble In A Tube"
t common types abused		

Audio Visual	Motivating Questions	Activities
	Is it as strong as morphine or heroin? Are the effects the same as morphine and heroin? Is withdrawal from codeine as severe as from morphine and heroin?	
Filmstrip: "Glue Sniffing" Transparencies: D-7 - #31, #32	What types of chemicals are abused the most?	Have stude board, an dangerous drug abuse

	Motivating Questions	Activities
	Is it as strong as morphine or heroin?	
	Are the effects the same as morphine and heroin?	
	Is withdrawal from codeine as severe as from morphine and heroin?	
ffing" - #31, #32	What types of chemicals are abused the most?	Have students make lists, bulletin board, and reports on potential dangerous chemicals pertaining to drug abuse.

Concepts	Teacher Materials
B. Effects on the body	Drugs: A-Z Dictionary
1. physical	"Glue Sniffing"
2. psychological	"The Glue Sniffing Problem"
C. Legal and medical use	
D. Method taken and abuse	
E. Slang terms	
F. Identification	
G. Where obtained	
VI. Stimulants	"Drugs and Your Body"
A. Amphetamines	Drugs: A-Z Dictionary
1. Most common commercial names of abused amphetamines	"Let's Talk About Goof Balls and Pep Pills"
2. Effects on the body	"The Up and Down Drugs"
a. physical	"Fact Sheets"
b. psychological	Drug Abuse Education
3. Legal use and dosage	"A Guide to Some Drugs Which Are Subject to Abuse"
4. Illegal use or abuse	
5. Slang terms	
6. Identification	
7. Value to individual	

)

	Teacher Materials	Student Materials
on the body	Drugs: A-Z Dictionary	Drugs: A-Z Dictionary
sical chological	"Glue Sniffing" "The Glue Sniffing Problem"	"The Glue Sniffing Problem"
nd medical use		
taken and abuse		
erms		
fication		
btained		
	"Drugs and Your Body"	"Let's Talk About Goof Balls and Pep Pills"
amines	Drugs: A-Z Dictionary	"The Up and Down Drugs"
st common commercial mes of abused phetamines	"Let's Talk About Goof Balls and Pep Pills"	Drugs: A-Z Dictionary
fects on the body	"The Up and Down Drugs"	"A Guide To Some Drugs Which Are Subject to Abuse"
physical psychological	"Fact Sheets" Drug Abuse Education	
gal use and dosage	"A Guide to Some Drugs Which Are Subject to Abuse"	
legal use or abuse		
ang terms		
entification		
lue to individual		

Audio Visual	Motivating Questions	Activit
	Why do teenagers turn to these drugs? Are they really as dangerous as printed materials state? Are aerosols dangerous?	Have st danger
Film: "Speed Scene: The Abuse of Amphetamines" Filmstrips: "Let's Talk About Goof Balls and Pep Pills" "Drug Misuse and Your Health" Transparencies: D-7 - #33-#36 Folder: "Drugs of Abuse" (for identification)	What are some proper uses of amphetamines? What are the dangers of overdosage and abuse of amphetamines? Are they really dangerous? What effects of amphetamines cause them to be abused? What are some reasons for turning to amphetamines? Is mixing drugs dangerous? Can a person die from an overdose? How did some of the slangy terms for these come into existence?	Make a on the of amph Make a on the ampheta Have st danger

	Motivating Questions	Activities
	Why do teenagers turn to these drugs?	Have students report on the danger of experimentation.
	Are they really as dangerous as printed materials state?	
	Are aerosols dangerous?	

e Abuse of	What are some proper uses of amphetamines?	Make a bulletin board or posters on the common and medical use of amphetamines.
	What are the dangers of overdosage and abuse of amphetamines?	Make a bulletin board or posters on the abuses and reactions to amphetamines.
Goof Balls	Are they really dangerous?	
our Health"	What effects of amphetamines cause them to be abused?	Have students report on the dangers of experimentation.
33-#36		
" (for	What are some reasons for turning to amphetamines?	
	Is mixing drugs dangerous?	
	Can a person die from an overdose?	
	How did some of the slangy terms for these come into existence?	

DRUGS (continued)

Concepts

B. Cocaine

1. Effects on the body
    a. physical
    b. psychological
2. Legal use
3. Method taken and abuse
4. Slang terms
5. Identification
6. Where obtained
7. Value to individual

Teacher Materials

Drugs: A-Z Dictionary

Drug Abuse - A Source Guide For Teachers

"A Guide To Some Drugs Which Are Subject to Abuse" (Good for review for evaluation of materials)

"Fact Sheets"

"First Facts About Drugs" (good questions)

	Teacher Materials	Student Materials
on the body ical nological e aken and abuse rms cation tained individual	Drugs: A-Z Dictionary Drug Abuse - A Source Guide For Teachers "A Guide To Some Drugs Which Are Subject to Abuse" (Good for review for evaluation of materials) "Fact Sheets" "First Facts About Drugs" (good questions)	Drugs: A-Z Dictionary "Fact Sheets" "A Guide To Some Drugs Which Are Subject to Abuse"

Audio Visual	Motivating Questions	Activities
	What are some medical uses of cocaine?	
	Is it still used extensively?	
	Does it cause physical dependency like heroin?	
	Who uses it the most?	
	How greatly is it abused?	
	Where is it obtained?	

VII. TEACHER INFORMATION

I. A. Drugs: substances used as medicine

B. Drug dependency: a state of psychic or physical dependency

1. Physical: prolonged administration of a drug in sufficient dosages in the body

   (Tolerance: resistance built up to the effects of a sin continued use it takes more of a drug to reach the desir

2. Psychological: a craving for the pleasurable mental effect produce

3. Addiction: the overwhelming involvement with a craving for a subst

4. Habituation: drug abuse of lesser degree than addiction (obsolete

C. Illusion: distortion of things that do exist

D. Hallucination: visions of things that exist only to the person seeing

E. Hallucinogen: drugs that produce hallucination - many times the user k

F. Withdrawal sickness: characteristic reaction of the body brought on b also vary in intensity with the amount of drug ta

Symptoms (usually set in within few hours after

1. anxiety
2. restlessness
3. body aches
4. yawning
5. tears
6. running nose
7. perspiration
8. nausea
9. diarrhea
10. abdominal and muscle cramps

VII. TEACHER INFORMATION

s used as medicine

a state of psychic or physical dependency

olonged administration of a drug in sufficient dosages which induces alteration the body

olerance: resistance built up to the effects of a single dose of drug - with ntinued use it takes more of a drug to reach the desired effect)

: a craving for the pleasurable mental effect produced by a drug

he overwhelming involvement with a craving for a substance or drug

drug abuse of lesser degree than addiction (obsolete)

tion of things that do exist

isions of things that exist only to the person seeing them

ugs that produce hallucination - many times the user knows they are hallucinations

ss: characteristic reaction of the body brought on by absence of a drug - will also vary in intensity with the amount of drug taken

Symptoms (usually set in within few hours after the last dose)

1. anxiety
2. restlessness
3. body aches
4. yawning
5. tears
6. running nose
7. perspiration
8. nausea
9. diarrhea
10. abdominal and muscle cramps

TEACHER INFORMATION (continued)

General terms ("Drugs: A-Z Dictionary" has a good explana
types and length of time)

1. will vary with type of drug
2. lasts from 2-5 days - will vary slightly from drug to

G. Psychotic: cannot determine real from unreal or what is really happening - cann

H. Medical uses: uses which are controlled by physicians to help relieve a person

I. Depressant: slows down the function of body function and movement - person can

J. Stimulant: speeds up central nervous system's functions - used to combat fatigu
loss, and mood elevating

II. Hallucinogens

A. Marijuana (marihuana - cannabis sativa)

1. Effects on the body: stimulates appetite, acts as depressant, causes halluc

   a. Physical: craving for sweet, and food in general - time and space disto
   control - person is usually pleasant, similar to being intoxi
   dependence
   b. Psychological: produces some illusion and hallucination - loss of time
   long duration causes loss of ambition and outside goals
   next "joint" - causes psychological dependence

2. Legal use: by scientists for study on effects immediate and long term

3. Illegal use: growing - teenagers are using it in place of alcohol - said to
pot parties are very common
4. Method taken: usually by smoking, in U.S., but may also be ingested in food
sometimes chewed - dosage is usually one cigarette - usually
as tea, oragano, and parsley - one ounce (mixed) usually make
"joints," depending on how much additive

TEACHER INFORMATION (continued)

General terms ("Drugs: A-Z Dictionary" has a good explanation of different types and length of time)

1. will vary with type of drug
2. lasts from 2-5 days - will vary slightly from drug to drug

etermine real from unreal or what is really happening - cannot stay in society

hich are controlled by physicians to help relieve a person from many diseases

own the function of body function and movement - person can die from overdose

central nervous system's functions - used to combat fatigue, control weight
mood elevating

- cannabis sativa)

ody: stimulates appetite, acts as depressant, causes hallucination and illusion

raving for sweet, and food in general - time and space distortion - loss of muscle
ontrol - person is usually pleasant, similar to being intoxicated - no physical
ependence
l: produces some illusion and hallucination - loss of time and space - abuse of long duration causes loss of ambition and outside goals - looks only for the next "joint" - causes psychological dependence

cientists for study on effects immediate and long term

owing - teenagers are using it in place of alcohol - said to be 60% trial use -
t parties are very common

sually by smoking, in U.S., but may also be ingested in foods of all sorts -
ometimes chewed - dosage is usually one cigarette - usually mixed with spices such
s tea, oragano, and parsley - one ounce (mixed) usually makes anywhere from 5-20
joints," depending on how much additive

TEACHER INFORMATION (continued)

5. Slang term: grass, pot, tea, weed, mary jane, cannabis, Indian hay

6. Indentification: may come in many forms but is usually deep green
odor such as hay or alfalfa when burning - the cigarettes will usua
burning

7. Where obtained:

   a. Drug itself: comes from female (Indian hemp, cannabis sativa)
   where effects are obtained - mannicured marihuana has stems and
   plant is used for hemp rope, paint, and cloth)

   b. Traffic: most comes from Mexico, some grows in U.S. but these
   and oriental types - U.S. type is the weakest of all - as much
   Mexico - there are so many methods of smuggling that they are u

8. Value to individual: pushers usually buys in kilo (2.2 lbs.) - var
from police, distance from source, and amount available at the time
(usually $5.00 for 1/5 - 1/4 oz.) and will roll up to fifteen cigar
usually sells for 50¢ to $1.00 - hashish is $40-$100 per oz.

9. Types abused: Mexican and U.S., most common - hashish, a resin est
used - is said to be 5-8 times as potent as marihuana, and reaction
and long lasting - usually chewed and swallowed

10. Results from long term abuse: not completely known as yet - believ
stuper, and lack of initiative - can also lead to, or open the door

B. Lysergic Acid Diethylamide: (LSD 25) synthetic form - (rye plant fungu

   1. Effects on body: can result in deep depression, but hallucinations

      a. Physical: no physical addiction determined yet - relation bet
      cal are closely knit - person has feeling that laws of nature d
      mental, and results in person feeling he can do impossible huma
      depression after trip - sensory changes are extreme

TEACHER INFORMATION (continued)

t, tea, weed, mary jane, cannabis, Indian hay, Alcopulco Gold, loco weed, hay

come in many forms but is usually deep green color - usually has a sweet falfa when burning - the cigarettes will usually have an orange color when

s from female (Indian hemp, cannabis sativa) - leaves and flowers is part obtained - mannicured marihuana has stems and seeds (rest of plant and male hemp rope, paint, and cloth)

nes from Mexico, some grows in U.S. but these are not as potent as middle East s - U.S. type is the weakest of all - as much as five tons comes weekly from e so many methods of smuggling that they are unlimited

pushers usually buys in kilo (2.2 lbs.) - varies greatly in price on heat from source, and amount available at the time - user usually buys in bag 5 - 1/4 oz.) and will roll up to fifteen cigarettes - joints (1 cigarette) to $1.00 - hashish is $40-$100 per oz.

n and U.S., most common - hashish, a resin estraction from plant, is also 5-8 times as potent as marihuana, and reactions are naturally more violent ually chewed and swallowed

m abuse: not completely known as yet - believed to cause loss of ambition, nitiative - can also lead to, or open the door to, other more potent drugs

e: (LSD 25) synthetic form - (rye plant fungus, ergot) natural hallucinogen

result in deep depression, but hallucinations are the major effects

ysical addiction determined yet - relation between physical and psychologinit - person has feeling that laws of nature do not apply to them, which is ts in person feeling he can do impossible human feats - almost always, trip - sensory changes are extreme

TEACHER INFORMATION (continued)

b. Psychological: person has hallucination and sensory changes - music can b
color tasted, colors are very brilliant, always - sometimes visions are ve
and cause physical damage by user to himself or others - some sources say
whether trip is good or bad - can end up in deep psychosis on trip or perm
psychological addiction (both effect usually last 24 hours)

2. Legal use: no legal market - only for scientific study, psychiatric experimen
3. Illegal use: seems to be wide spread use, however it varied with availabilit
LSD are impure
4. Method: usually taken orally - is a very potent drug, 50-150 micrograms can
and for this reason, doesn't need to be injected - may be taken in many forms
cookies, licked off stamps and now may be made into tablet form - now doesn't
5. Slang terms: LSD, acid, sunshine, royal blue, heavenly blue, pearly gates, s
6. Identification: difficult at best because it is colorless, odorless, and tas
7. Traffic: usually through underground pusher (small time) - made in home chem
pressers - so strong that an ounce can produce several thousand doses - very
push
8. Value: single dose (200-300 micrograms) of LSD was $2.50 to $10.00 in 1967 -
pressure and availability
9. Long term results: hasn't been determined yet - may result in chromosomes br
danger is that person will become psychotic if he uses LSD long enough, or ma
from the first trip

C. Mescaline: from peyote cactus buttons

1. Effects on body
   a. Physical)
   almost exactly like LSD 25
   b. Psychological)

TEACHER INFORMATION (continued)

on has hallucination and sensory changes - music can be seen or felt,
are very brilliant, always - sometimes visions are very frightening
amage by user to himself or others - some sources say person can control
or bad - can end up in deep psychosis on trip or permanently - Probably
ion (both effect usually last 24 hours)

ket - only for scientific study, psychiatric experimentation only

e wide spread use, however it varied with availability - most sources of

orally - is a very potent drug, 50-150 micrograms can result in effects,
esn't need to be injected - may be taken in many forms as sugar cubes,
mps and now may be made into tablet form - now doesn't need to be refrigerated

, sunshine, royal blue, heavenly blue, pearly gates, serenity and tranquility

ult at best because it is colorless, odorless, and tasteless

gh underground pusher (small time) - made in home chemistry labs with pill
at an ounce can produce several thousand doses - very easy to smuggle and

0-300 micrograms) of LSD was $2.50 to $10.00 in 1967 - would vary on police
ty

n't been determined yet - may result in chromosomes breakage - greatest
ill become psychotic if he uses LSD long enough, or may be the same result

tus buttons

almost exactly like LSD 25

2. Method taken: ingested orally - usually chew the buttons with wine - n swallowed, producing effects

3. Slang terms: mescal buttons, mescal, seni, moon

4. Legal use: no legal retail market - authorized only for members of Nat

D. STP-DMT: synthetic drugs, not as potent as LSD but trip lasts up to three

1. Effects on body: similar to LSD in respects as hallucinogen, not legal

2. Slang terms: dom, peace

E. Psilocybin: mushroom from Mexico and South America

1. very similar to LSD 25 in effects on body, no legal market, taken oral

2. Use: is used by natives of Mexico and South America as a religious dr

3. is not very prominent in abuse scene at present - usually used only by

III. Depressants

A. Barbiturates (barbituratics acid)

1. Effects on body: causes intoxication, confusion, tremors, and in gene body functions

a. Physical: can result in physical addiction, tolerance is built up drawal sickness - can take overdose and death can result - 3000 su

b. Psychological: intoxication, confusion, can result in auditory an cal addiction

2. Method taken and dosage: 100-200 milligrams daily - abuser may take u daily - usually taken orally in capsule form, but long time user turns directly into vein

TEACHER INFORMATION (continued)

orally - usually chew the buttons with wine - now separated and is just
fects

ttons, mescal, seni, moon

tail market - authorized only for members of Native American Church, Indians

not as potent as LSD but trip lasts up to three days

lar to LSD in respects as hallucinogen, not legal,

ce

Mexico and South America

in effects on body, no legal market, taken orally

es of Mexico and South America as a religious drug

in abuse scene at present - usually used only by hard core users

s acid)

ses intoxication, confusion, tremors, and in general, depression of all

sult in physical addiction, tolerance is built up, and there is also with-
can take overdose and death can result - 3000 suicides yearly in U.S.

ntoxication, confusion, can result in auditory and visual illusion - *psychologi-

ge: 100-200 milligrams daily - abuser may take upwards of 400+ milligrams
orally in capsule form, but long time user turns into liquid and injects

TEACHER INFORMATION (continued)

3. Medical and legal use: sedation and sleep, nervousness - prescription drug

4. Illegal use: abuser takes in large doses mostly for intoxication feeling - to dosage - forces self to stay awake for feeling - often mixes downers with amphe general abuse and also availability

5. Slang terms: barbs, yellow jackets, goof balls, downers, candy, blue heavens,

6. Most common types of abuse: pentobarbital, secobarbital, nembutal

7. Indentification: usually by capsule color

8. Where obtained: synthetic drug

   Traffic: can be made in laboratories and capsuled by pusher - also can be legal factories - also pushers steal doctor's order balnks from factory

9. Value: 10¢-20¢ through Rx, but won't supply enough for abuser - usually sell capsule in illicit market

B. Narcotics

1. Opium

   a. Effects on body-euphoria

      (1) Physical: tolerance, physical addiction, withdrawal, depression, eup
      (2) psychological: euphoria

   b. Legal use: none

   c. Illegal use: very little use in U.S., only 62.81 pounds seized by the Bu in 1964 - oriental countries are more predominant

   d. Method taken: is usually smoked

   e. Slang terms: black

TEACHER INFORMATION (continued)

sedation and sleep, nervousness - prescription drug

es in large doses mostly for intoxication feeling - tolerance means increased
stay awake for feeling - often mixes downers with amphetamines - is a great
vailability

llow jackets, goof balls, downers, candy, blue heavens, red devils

use: pentobarbital, secobarbital, nembutal

ly by capsule color

tic drug

de in laboratories and capsuled by pusher - also can be hijacked from
lso pushers steal doctor's order balnks from factory

Rx, but won't supply enough for abuser - usually sell for 15¢-50¢ per
et

phoria

lerance, physical addiction, withdrawal, depression, euphoria
: euphoria

little use in U.S., only 62.81 pounds seized by the Bureau of Narcotics
countries are more predominant

usually smoked

k

TEACHER INFORMATION (continued)

f. Where obtained: oriental poppy seeds

g. Derivatives: morphine, heroin, percodan, codeine

Morphine: derivative of opium - oriental poppy

a. Effects on the body: euphoria, drowsiness, confusion and depression of body functions

   (1) Physical: tolerance, physical dependency, withdrawal sickness, euphoria
   (2) Psychological: dependency, euphoria and confusion

b. Legal or medical uses: is still one of our best pain killers on the market today - affects the central nervous system - used legally by Rx - some people have physical reaction from use and cannot use the drug

c. Abuse: is not abused to a great extent because heroin is much stronger, but is used as a substitute if the addict cannot obtain his heroin - used by medical people because of availability to them

d. Method taken: most often it is injected or taken orally - takes 3-5 times as much orally to get the same effects as through injection

e. Identification: usually a white or brownish powder - can be compressed into a capsule - has a bitter taste and is odorless

f. Slang terms: morpho, M, Miss Emma, white stuff, hard stuff, junk, dope

g. Common abuse: not as much as heroin because it is less potent - Bureau of Narcotics seized 140 trams of morphine to 45 kilograms of heroin in 1964 - mainly used as a substitute when heroin is unavailable

h. Where obtained:

   (1) made from the natural alkaloid in opium and is more physically addicting than the mother drug
   (2) since it is legal by Rx, there is little illegal traffic into the U.S. - most is stolen or hijacked from drug companies or hospitals

TEACHER INFORMATION (continued)

i. Value: about the same as heroin

3. Heroin: derivative of morphine, which is opium

   a. Effects on body: same as morphine

      (1) Physical: tolerance, physical dependency, withdrawal euphoria - morphine, 2-3 times
      (2) Psychological: almost exactly the same as morphine

   b. Legal or medical use: no legal retail market

   c. Abuse Illegal): many sources feel it is on the increase with younger times used to assist the person back down from amphetamines - opinion of addiction is going to get worse

   d. Method taken: individual will usually take first dose orally, then c injecting because of loss of effect through digestive system and cost method, the addict's veins will collapse in the arms and he will have such as legs and inside mouth

   e. Slang terms: horse, H, smack, boy, white stuff, joy powder, stuff, s

   f. Identification: usually a white or brownish powder - brownish, if it is usually a lower grade - has a bitter taste and a vinegar-like odor

   g. Where obtained:

      (1) drug, itself, is derived from morphine, which is from opium and than morphine - was first developed in 1898

      (2) Traffic: most comes from France or Mexico - that from France or is brought to Turkey as raw opium, then converted to morphine, t made into heroin - The Federal Narcotics Bureau seized 277.8 ki was estimated to be about 10% of the amount smuggled into the U

TEACHER INFORMATION (continued)

the same as heroin

re of morphine, which is opium

dy: same as morphine

: tolerance, physical dependency, withdrawal euphoria - is much stronger than
, 2-3 times
gical: almost exactly the same as morphine

cal use: no legal retail market

): many sources feel it is on the increase with younger individuals - is some-
assist the person back down from amphetamines - opinion of many that the problem
is going to get worse

individual will usually take first dose orally, then quickly advance to
ause of loss of effect through digestive system and cost - through injection
ddict's veins will collapse in the arms and he will have to find other areas
and inside mouth

horse, H, smack, boy, white stuff, joy powder, stuff, sugar

n: usually a white or brownish powder - brownish, if it comes from Mexico, and
lower grade - has a bitter taste and a vinegar-like odor when diluted with water

d:

self, is derived from morphine, which is from opium and is 3-5 times stronger
phine - was first developed in 1898

most comes from France or Mexico - that from France originates in the orient,
ght to Turkey as raw opium, then converted to morphine, then on to France to be
o heroin - The Federal Narcotics Bureau seized 277.8 kilograms in 1966, which
imated to be about 10% of the amount smuggled into the U.S.

h. Value: Raw opium sold by the grower in the orient brings about $ but by the time it reaches the U.S., in the form of heroin, it wi $50,000. It has been cut (diluted, mixed) with sugar and can ran One single bag sells for about $5.00 to the addict, however, the twenty bags. Habits can range up to $100.00 per day.

4. Codeine: derivative of opium

   a. Effects on the body:

      (1) Physical: almost exactly the same as morphine and heroin, b only 1/6 as potent as morphine - withdrawal is as intense a
      (2) Psychological: same as morphine

   b. Legal or medical use: legal by Rx, but since it is less potent, of minor pain, or as a cough depressant

   c. Illegal abuse: usually abuse is in the form of cough syrup - th in intoxication

   d. Method taken: usually orally in cough medicine

   e. Identification: similar to that of morphine and heroin

   f. Where obtained:

      (1) drug, itself, is obtained from opium
      (2) Traffic: is used by Rx - is not smuggled in any quantity - drug companies or drug stores in smaller quantities

5. Percodan: a derivative of morphine

   a. sold by manufacturer in case of minor pain causing sleeplessness

   b. Sold as yellow scored tablets or pink scored tablets - a class " or heroin)

TEACHER INFORMATION (continued)

pium sold by the grower in the orient brings about $35.00 a kilogram (2.2 lbs.),
ne it reaches the U.S., in the form of heroin, it will bring about $40,000 to
has been cut (diluted, mixed) with sugar and can range from 3% heroin to 10%.
g sells for about $5.00 to the addict, however, the addict may need as much as
Habits can range up to $100.00 per day.

ive of opium

e body:

: almost exactly the same as morphine and heroin, but less intense as it is
as potent as morphine - withdrawal is as intense as heroin
gical: same as morphine

cal use: legal by Rx, but since it is less potent, it is used only in cases
, or as a cough depressant

: usually abuse is in the form of cough syrup - the alcohol content will assist
ion

usually orally in cough medicine

on: similar to that of morphine and heroin

ed:

tself, is obtained from opium
: is used by Rx - is not smuggled in any quantity - is usually stolen from
npanies or drug stores in smaller quantities

ivative of morphine

facturer in case of minor pain causing sleeplessness

ow scored tablets or pink scored tablets - a class "A" narcotic (same as morphine

c. has been reported that it is popular among addicts in California

C. Demerol: synthetic opiate used as a sedative

1. usually used medically to assist in childbirth - effects are similar to morphin produce as much sedation

2. because of its accessibility in hospitals, and mistaken belief it is non-addict extensively - class "A" narcotic (same as morphine)

IV. Methadone: synthetic opiate

A. Effects on the body

1. Physical: almost exactly the same as morphine, but with less respiratory depre chemical structure

2. Psychological: same as morphine

B. Legal or medical use: relief of pain similar to morphine

C. Illegal use, abuse: used by addicts in place of heroin or morphine to relieve with "A" narcotic (same as morphine and heroin)

D. Method taken: is usually taken orally or injected

E. Methadone is usually used as a treatment of heroin or morphine withdrawal. Withdra and substituted for heroin. The addict has only methodone withdrawal. For this re by hospitals to withdraw addicts.

V. Volatile chemicals

A. Most common types abused: Model airplane glue, shoe polish, lacquer, aerosols, pai gasoline

TEACHER INFORMATION (continued)

that it is popular among addicts in California

used as a sedative

to assist in childbirth - effects are similar to morphine but it does not
ion

ibility in hospitals, and mistaken belief it is non-addicting, it is used
A" narcotic (same as morphine)

ctly the same as morphine, but with less respiratory depression - different

as morphine

lief of pain similar to morphine

by addicts in place of heroin or morphine to relieve withdrawal - class
phine and heroin)

taken orally or injected

as a treatment of heroin or morphine withdrawal. Withdrawal is less intense
n. The addict has only methodone withdrawal. For this reason, it is used
addicts.

Model airplane glue, shoe polish, lacquer, aerosols, paint thinner,

B. Effects on the body:

1. Physical: most of the effects are intoxication - all of the effect
intoxication are present - in some cases aerosol abuse causes freezi
death - there is tolerance, but no physical addiction

2. Psychological: from time to time, the effects act differently in th
behavior is a common occurance - there is also a self destruction te
individual usually withdraws in fantasy

C. Legal or medical use: most of the chemicals have a common use, but non

D. Methods of abuse: in almost all circumstances the chemicals are inhale

E. Slang terms: sniffing and glue-sniffing

F. Identification: the chemical will be easily distinguished as the user
or container to sniff from

G. Where obtained: all of these chemicals are readily available in most r
stores are not putting them on the display counters and clerks are to n
and report them to the local authorities - low cost has also contribute

VI. Stimulants

A. Amphetamines

1. Most common types abused: benzedrine, dexidrine, methedrine (speed

2. Effects on the body:

a. Physical: there is a tolerance and no physical addiction or wi
on the user are excitability, rapid, unclear speech, sweating,

b. Psychological: psychoses can be induced - hallucinations are p
use - many times user will have feelings that everyone is again
psychological dependency is developed

TEACHER INFORMATION (continued)

ffects are intoxication - all of the effects that go along with alcohol
t - in some cases aerosol abuse causes freezing of the lungs resulting in
nce, but no physical addiction

ne to time, the effects act differently in the same person - aggressive
curance - there is also a self destruction tendency, however, the
draws in fantasy

of the chemicals have a common use, but none have a medical use

t all circumstances the chemicals are inhaled into the respiratory system

glue-sniffing

al will be easily distinguished as the user can be seen with a paper bag

se chemicals are readily available in most retail stores, however, most
on the display counters and clerks are to note large or repeated purchases
l authorities - low cost has also contributed to their abuse

ed: benzedrine, dexidrine, methedrine (speed), desbutal, desoxyn, dexamyl

a tolerance and no physical addiction or withdrawal sickness - usual effects
citability, rapid, unclear speech, sweating, dry lips, dilated pupils, psychoses

chooses can be induced - hallucinations are present with high dosage and long
ser will have feelings that everyone is against him or want to harm him -
ndency is developed

3. Legal or medical uses: all are legal by Rx and are used to assist in weigh depression, and narcolepsy - average medical dosage is 15-30 milligrams

4. Method taken: usually tablets or capsules are taken orally, but in some ci dissolved and injected - the abuser uses amphetamines for such purposes - s stimulation of their mental processes, promote alertness, retention, and wa them for added mental energy to cope with a situation, and for purposes of large amounts of work - does not improve performance (increases errors) bu with a task - dosage may reach 200-1000 milligrams

5. Slang terms: meth, pep pills, uppers, wake-ups, bennies, peaches, hearts, co-pilots

6. Value: relatively inexpensive because of its Rx use - may range from 15¢

7. Identification: by color of capsule or tablet, otherwise it would require to determine exactly

B. Cocaine

1. Effects on the body:

   a. Physical: suphoria, excitability, anxiety, headache, hallucinations - dangerous - chronic use may result in loss of appetite, nausea, loss o convulsions, paranoid delusions - no tolerance or withdrawal

   b. Psychological: used to create feelings brought on through the physica no tolerance or withdrawal

2. Where obtained: from the coca bush (erythroxylon coca) of South America

3. Legal use: it is legal by Rx - occasionally used for local anesthesia

4. Illegal use or abuse: most frequently it is sniffed or injected - loses m ingested - the user seeks extreme mood elevation, elation, and mental prow

TEACHER INFORMATION (continued)

all are legal by Rx and are used to assist in weight loss, relieve mild
lepsy - average medical dosage is 15-30 milligrams

tablets or capsules are taken orally, but in some circumstances they are
- the abuser uses amphetamines for such purposes - students use them for
mental processes, promote alertness, retention, and wakefulness - some take
energy to cope with a situation, and for purposes of staying awake to achieve
- does not improve performance (increases errors) but enables user to stay
may reach 200-1000 milligrams

ep pills, uppers, wake-ups, bennies, peaches, hearts, speed, cartwheels,

expensive because of its Rx use - may range from 15¢ to 75¢ per capsule

olor of capsule or tablet, otherwise it would require laboratory testing

ia, excitability, anxiety, headache, hallucinations - may be violent and
ic use may result in loss of appetite, nausea, loss of weight, occasional
noid delusions - no tolerance or withdrawal

sed to create feelings brought on through the physical effects - there is
ithdrawal

the coca bush (erythroxylon coca) of South America

gal by Rx - occasionally used for local anesthesia

: most frequently it is sniffed or injected - loses most of its effect if
seeks extreme mood elevation, elation, and mental prowess induced by the drug

TEACHER INFORMATION (continued)

5. Slang terms: dust, flake, gold dust, girl, bernice, cecil, C

6. Identification: usually a white flaky powder, bitter to taste, odorless, but will numb lips and tongue

7. Value: is a relatively inexpensive in single dose, but could build up if user becomes psychologically dependent on the drug

SELECT QUESTIONS FOR PRE AND POST TESTS

True-False Questions

1. The term "drug" applies only to substances that are used as medicines.

2. The medical meaning of the term "narcotic" differs from the legal meaning of t

3. Drug dependence is said to exist only when a person is physically and psycholo dependent on a drug.

4. Psychological dependence on a drug is easier to overcome than physical depende

5. When a person has developed tolerance to a drug, he needs increasing amounts o drug in order to react satisfactorily to its presence.

6. Amphetamine, when self-administered to prevent sleepiness while driving, may c intoxication which affects the driver's ability to handle his car safely.

7. Barbiturates, taken in excessive amounts, cause a severe depression of the cen nervous system which may result in unconsciousness or death.

8. When alcohol and barbiturates are taken together, the drugs tend to neutraliz other, causing a relatively mild reaction.

9. Barbiturates, if taken repeatedly, may cause total drug dependence which is co in severity to heroin dependence.

10. Amphetamine may be self-administered with relative safety because it does not drug dependence.

11. The dangerous drugs differ from the narcotics in that their excessive use lea to psychological dependence, whereas narcotic abuse leads to both psychologica physical dependence.

12. The young person who abuses dangerous drugs is likely already to have a histor delinquent behavior.

13. It has been shown through experimentation that the use of amphetamines can substantially improve athletic performance.

TEACHER INFORMATION (continued)

SELECT QUESTIONS FOR PRE AND POST TESTS

applies only to substances that are used as medicines.	False
ing of the term "narcotic" differs from the legal meaning of the term.	True
is said to exist only when a person is physically and psychologically rug.	False
pendence on a drug is easier to overcome than physical dependence.	False
s developed tolerance to a drug, he needs increasing amounts of that react satisfactorily to its presence.	True
en self-administered to prevent sleepiness while driving, may cause ich affects the driver's ability to handle his car safely.	True
aken in excessive amounts, cause a severe depression of the central which may result in unconsciousness or death.	Rrue
barbiturates are taken together, the drugs tend to neutralize each relatively mild reaction.	False
taken repeatedly, may cause total drug dependence which is comparable eroin dependence.	True
be self-administered with relative safety because it does not lead to .	False
rugs differ from the narcotics in that their excessive use leads only l dependence, whereas narcotic abuse leads to both psychological and ence.	False
n who abuses dangerous drugs is likely already to have a history of vior.	False
wn through experimentation that the use of amphetamines can sub- ove athletic performance.	False

SELECT QUESTIONS FOR PRE AND POST TESTS

True-False Questions

14. The organic solvents present in glues and plastic cements are capable of dam the brain, affecting liver and kidney functions, and interfering with the bl forming function of the bone marrow.

15. There is no evidence that glue sniffing leads to the development of dependen

16. It is believed that the abuse of volatile chemicals will soon be solved thro the development of non-intoxicating solvents to replace those now present in and plastic cements.

17. Marihuana is an important medicinal drug because of its effectiveness as a p

18. Marihuana is a contraband drug, and whoever produces or distributes it is gu crime punishable as a felony.

19. Most marihuana entering the United States today comes by way of Mexico.

20. The plant Cannabis Sativa, from which marihuana is derived, grows only in wa climates.

21. The plant from which marihuana is derived has been known and used as a drug thousand years.

22. A person who feels he must take marihuana (or any other drug) in order to en or to belong in a group has failed to make a normal wholesome adjustment to has not learned to function as an independent, responsible member of societ

23. If other people are using marihuana (or any other drug), it is best for you too, so as not to appear different.

24. If you can't find success or enjoyment in life, it is wise to try to forget of failure by drinking alcohol or taking drugs.

25. Since most marihuana users today do not progress to heroin, there is little to use marihuana.

TEACHER INFORMATION (continued)

SELECT QUESTIONS FOR PRE AND POST TESTS

resent in glues and plastic cements are capable of damaging iver and kidney functions, and interfering with the bleed- e bone marrow.	True
hat glue sniffing leads to the development of dependence.	False
e abuse of volatile chemicals will soon be solved through -intoxicating solvents to replace those now present in glues	False
ant medicinal drug because of its effectiveness as a pain-killer.	False
and drug, and whoever produces or distributes it is guilty of a felony.	True
g the United States today comes by way of Mexico.	True
tiva, from which marihuana is derived, grows only in warm, humid	False
arihuana is derived has been known and used as a drug for several	True
must take marihuana (or any other drug) in order to enjoy life up has failed to make a normal wholesome adjustment to life and nction as an independent, responsible member of society.	True
sing marihuana (or any other drug), it is best for you to use it, ear different.	False
ccess or enjoyment in life, it is wise to try to forget your sense g alcohol or taking drugs.	False
users today do not progress to heroin, there is little reason not	False

TEACHER INFORMATION (continued)

SELECT QUESTIONS FOR PRE AND POST TESTS

True-False Questions

26. Marihuana contains a powerful chemical that appears to incite its users to c
acts of violence.

27. There is now believed to be little or no relation between the use of marihua
the commission of acts of violence.

28. A person who forms a habit of marihuana use may find it exceedingly difficu
break that habit.

29. The use of marihuana opens the way for many persons to the use of other dru

30. When a drug is said to be "non-addicting," it means that a person using the
can stop any time he wants to.

31. A person should make decisions in terms of his own standards and conviction
than in terms of the pressure and practices of other people.

32. Marihuana, while apparently acting as a stimulant, dulls the higher control
of the brain so that one's conduct may become socially unacceptable, for hi
inhibitions no longer prevail.

33. A person under the influence of marihuana is able to think more clearly and
efficiently than he would under normal conditions.

34. When a person has taken marihuana, he is likely to experience a period of s
followed by a period of depression.

35. LSD may be used only for purposes approved by the federal Food and Drug Adm

36. Any licensed physician can obtain LSD from the Food and Drug Administratio
purpose of conducting scientific investigations.

37. People with stable personalities seldom experience adverse effects after ta

38. Since the early 1940's, scientists have known that LSD causes hallucinatio

TEACHER INFORMATION (continued)

SELECT QUESTIONS FOR PRE AND POST TESTS

ns

tains a powerful chemical that appears to incite its users to commit ence.	False
believed to be little or no relation between the use of marihuana and on of acts of violence.	False
forms a habit of marihuana use may find it exceedingly difficult to abit.	True
arihuana opens the way for many persons to the use of other drugs.	True
is said to be "non-addicting," it means that a person using the drug time he wants to.	False
uld make decisions in terms of his own standards and convictions rather s of the pressure and practices of other people.	True
hile apparently acting as a stimulant, dulls the higher control centers so that one's conduct may become socially unacceptable, for his normal no longer prevail.	True
er the influence of marihuana is able to think more clearly and act more than he would under normal conditions.	False
n has taken marihuana, he is likely to experience a period of stimulation a period of depression.	True
sed only for purposes approved by the federal Food and Drug Administration.	True
physician can obtain LSD from the Food and Drug Administration for the onducting scientific investigations.	False
stable personalities seldom experience adverse effects after taking LSD.	False
rly 1940's, scientists have known that LSD causes hallucinations.	True

SELECT QUESTIONS FOR PRE AND POST TESTS

True-False Questions

39. LSD is one of the most potent drugs known to man.

40. LSD has an accepted place in medical practicw.

41. After a user takes LSD, his mind "expands" and he becomes more aware of

42. Psychological dependence may result from the use of LSD.

43. A user taking the same amount of LSD in the same surroundings a second
an experience similar to the one he had the first time.

44. An hallucination experience, after a person has taken LSD, can recur sev
even though he has not taken any more of the drug.

45. An individual's value system often changes after he has taken LSD.

46. After taking LSD, the user becomes more social; that is, he relates mor
those around him.

47. A number of persons have committed suicide after taking LSD.

48. Some people use LSD in order to withdraw from reality.

49. A person who has used LSD several times can predict the kind of side ef
that a new user might expect.

50. Persons who use LSD seldom use any other drugs.

51. In Montana it is illegal to have LSD in one's possession.

52. LSD is derived from the sacred mushroom, which has long been used by the

53. LSD is a relatively mild drug which can be used safely in large amounts

54. Once it is brought under medical control, LSD promises to be a "miracle"
it helps people to solve their problems and adjust better to life.

TEACHER INFORMATION (continued)

SELECT QUESTIONS FOR PRE AND POST TESTS

s

the most potent drugs known to man.	True
epted place in medical practicw.	False
akes LSD, his mind "expands" and he becomes more aware of his surroundings.	False
dependence may result from the use of LSD.	True
the same amount of LSD in the same surroundings a second time will have similar to the one he had the first time.	False
on experience, after a person has taken LSD, can recur several months later has not taken any more of the drug.	True
s value system often changes after he has taken LSD.	True
SD, the user becomes more social; that is, he relates more closely to im.	False
rsons have committed suicide after taking LSD.	True
e LSD in order to withdraw from reality.	True
as used LSD several times can predict the kind of side effects, if any, r might expect.	False
e LSD seldom use any other drugs.	False
is illegal to have LSD in one's possession.	True
from the sacred mushroom, which has long been used by the Indians in Mexico.	False
ively mild drug which can be used safely in large amounts.	False
ught under medical control, LSD promises to be a "miracle" drug in that e to solve their problems and adjust better to life.	False

True-False Questions

SELECT QUESTIONS FOR PRE AND POST TES

55. LSD and other hallucinogens are now subject to the same federal controls dangerous drugs.

56. The use of LSD is frequently accompanied by severe and dangerous side ef

57. Physicians prescribe LSD for persons who have symptoms of anxiety and de

58. LSD has a special attraction for adolescents who are searching for ident

59. LSD can help adolescents resolve the conflicts of "growing up."

60. Involvement in narcotic use, if it occurs, is likely to take place only experience with other drugs.

61. Heroin is legally used in the United States today as a medicinal drug.

62. The process of injecting heroin (or any other foreign substance) directl veins carries serious danger of infection.

63. Since heroin appears not to damage body tissue, its use is not serious f standpoint of health.

64. The use of heroin leads rapidly and almost inevitably to total drug depe

65. The recent increase in sex crimes throughout the United States is attrib part, to the increase in narcotic use.

66. Narcotic dependence may be said to be cured when a person has been relie physical aspects of dependence.

67. The narcotic addict in Great Britain, once he has registered with design is entitled automatically to receive a supply of drugs sufficient to mai level of dependence.

68. The "clinic plan" of administering sustaining doses of narcotics to addi in the United States in the 1920's and deemed a success at that time.

TEACHER INFORMATION (continued)

SELECT QUESTIONS FOR PRE AND POST TESTS

cinogens are now subject to the same federal controls as the	True
requently accompanied by severe and dangerous side effects.	True
e LSD for persons who have symptoms of anxiety and depression.	False
ttraction for adolescents who are searching for identity.	True
cents resolve the conflicts of "growing up."	False
otic use, if it occurs, is likely to take place only after prior er drugs.	True
sed in the United States today as a medicinal drug.	False
cting heroin (or any other foreign substance) directly into the us danger of infection.	True
s not to damage body tissue, its use is not serious from the h.	False
eads rapidly and almost inevitably to total drug dependence.	True
in sex crimes throughout the United States is attributable, in se in narcotic use.	False
may be said to be cured when a person has been relieved of the f dependence.	False
in Great Britain, once he has registered with designated authorities, tically to receive a supply of drugs sufficient to maintain his desired e.	False
of administering sustaining doses of narcotics to addicts was tried es in the 1920's and deemed a success at that time.	False

TEACHER INFORMATION (con

SELECT QUESTIONS FOR PRE AND POST T

True-False Questions

69. The American Medical Association has come out in favor of the adoptio
method of narcotics control in the United States

70. The United States has made significant progress in international narc

71. In the United States the dispensing of drugs by a physician to an add
of his desire or need for drugs is now considered by the courts to fa
legitimate medical practice

72. Whereas control of drug abuse in the United States rests largely in t
enforcement personnel, control in Great Britain is vested in the medi

73. Since the drug abuse pattern in the United States differs drasticall
Britain, it is doubtful that this country will ever move toward the w
the British method of narcotic control.

74. Under Montana law the mere possession of marihuana or of a narcotic (
prescribed by a physician) is illegal.

Multiple Choice Questions

1. "A substance that produces sleep, lethargy, and relief of pain" is th
(a) a drug; (b) a sedative; (c) a narcotic; (d) an opiate; or (e) an

2. A substance, other than food, that affects body structure and functio
depressant; (b) a narcotic; (c) an analgesic; (d) a drug; or (e) an i

3. The term "narcotic" is used medically in reference to (a) marihuana;
(c) the opiates; (d) the hallucinogens; or (e) the hypnotics.

4. "A state arising from repeated administration of a drug on a periodic
is the definition of (a) drug abuse; (b) depression; (c) drug depend
or (e) euphoria.

TEACHER INFORMATION (continued)

SELECT QUESTIONS FOR PRE AND POST TESTS

ciation has come out in favor of the adoption of the British rol in the United States	False
le significant progress in international narcotic control.	True
dispensing of drugs by a physician to an addict for the gratification r drugs is now considered by the courts to fall within the province of ice	False
buse in the United States rests largely in the hands of law ontrol in Great Britain is vested in the medical profession.	True
tern in the United States differs drastically from that in Great that this country will ever move toward the wholesale adoption of rcotic control.	True
re possession of marihuana or of a narcotic (other than one n) is illegal.	True
es sleep, lethargy, and relief of pain" is the definition of ve; (c) a narcotic; (d) an opiate; or (e) an analgesic.	c
food, that affects body structure and function is called (a) a ic; (c) an analgesic; (d) a drug; or (e) an intoxicant.	d
sed medically in reference to (a) marihuana; (b) the barbiturates; hallucinogens; or (e) the hypnotics.	c
peated administration of a drug on a periodic or continuous basis" drug abuse; (b) depression; (c) drug dependence; (d) analgesia;	c

TEACHER INFORMATION (continued)

5. Substances which depress body functions are (a) barbiturates and amphetamines; (b) barbiturates and opiates; (c) amphetamines and opiates; (d) cocaine and marihuana; or (e) amphetamines and cocaine b

6. Substances which stimulate body functions are (a) barbiturates and amphetamines; (b) barbiturates and opiates; (c) amphetamines and opiates; (d) cocaine and marihuana; or (e) amphetamines and cocaine. e

7. "A generalized feeling of well-being in the absence of any objective justification for such a feeling" is a definition of (a) euphoria; (b) tolerance; (c) analgesia; (d) dependence; or (e) hallucination. a

8. One of the following statements about the dangerous drugs is correct: (a) they are outlawed both legally and medically; (b) they may be used legally without a doctor's prescription; (c) they may be used legally only with a doctor's prescription; (d) they fall under different regulations depending on the drug involved; or (e) they are mild drugs comparable to alcohol in their effects. c

9. The most hopeful approach to the solution of the glue sniffing problem at present appears to lie in (a) more stringent laws; (b) more stringent enforcement of existing laws; (c) voluntary control by distributors of glues and plastic cements; (d) replacement of volatile chemicals by non-intoxicating solvents; or (e) education of children concerning the hazards of introducing foreign substances into the body. e

10. In the United States marihuana is most frequently taken into the body by (a) chewing; (b) sniffing; (c) eating; (d) drinking; or (e) smoking. e

11. The odor associated with the use of marihuana is most like (a) dried alfalfa or hay; (b) alcohol; (c) garlic; (d) decaying fruit; or (e) burning wood. a

12. The body system most affected by the use of marihuana is (a) the nervous; (b) the circulatory; (c) the digestive; (d) the respiratory; (e) the muscular. a

TEACHER INFORMATION (continued)

13. In laboratory research LSD has proved to be (a) safe and effective for th epilepsy; (b) safe but not effective for the treatment of alcoholism; (c) nor effective for the treatment of any disease; or (d) safe but not effec treatment of psychosis.

14. From among the following side effects, the one which has not resulted fro LSD is (a) distortion of perception; (b) withdrawal illness; (c) delusion (d)severe depression.

15. A person who takes LSD often continues to take it because (a) it improves concentrate; (b) it causes sexual stimulation; (c) it creates a sensation or (d) it brings on a physical craving

16. The part of the opium poppy from which raw opium is derived is (a) dried (b) dried leaves; (c) unripe seed pods; (d) ripe seeds; or (e) unripe see

17. The federal law which forms the basis of our government's control over na requiring registration and payment of an occupational tax by those who de is (a) the Boggs Act; (b) the Narcotic Control Act; (c) The Harrison Narc Opium Poppy Control Act; or (e) the Narcotic Drugs Import and Export Act.

TEACHER INFORMATION (continued)

LSD has proved to be (a) safe and effective for the treatment of not effective for the treatment of alcoholism; (c) neither safe reatment of any disease; or (d) safe but not effective for the	c
g side effects, the one which has not resulted from the use of f perception; (b) withdrawal illness; (c) delusions; or	b
often continues to take it because (a) it improves his ability to ses sexual stimulation; (c) it creates a sensation which he likes; hysical craving	c
oppy from which raw opium is derived is (a) dried flowers; nripe seed pods; (d) ripe seeds; or (e) unripe seeds.	c
orms the basis of our government's control over narcotics by and payment of an occupational tax by those who deal in narcotics b) the Narcotic Control Act; (c) The Harrison Narcotic Act; (d) the ; or (e) the Narcotic Drugs Import and Export Act.	c

TEACHER INFORMATION (cont

PRE AND POST TEST

Bread
Drop
Goof Balls
Hang-up
Horse
Kick
Monkey
Roach
STP
Ups
Barbs
Blow a stick
Hash
Joint
Mainline
Man
Meth
Smashed

1. Money
2. A personal problem
3. To take by mouth
4. A drug habit where physical dependence is present
5. To abandon a drug habit
6. The butt of a marijuana cigarette
7. Stimulants
8. A highly potent hallucinogen
9. Heroin
10. Barbiturates
11. Intoxicated (drug or alcohol)
12. Barbiturates
13. A marijuana cigarette
14. To inject drugs directly into a vein
15. To sniff powdered narcotics into nostrils
16. Hashish, marijuana
17. The police
18. Being "high" on hallucinogens

TEACHER INFORMATION (continued)

PRE AND POST TEST

ney	(bread)
personal problem	(hang-up)
take by mouth	(grop)
drug habit where physical dependence is present	(monkey)
abandon a drug habit	(kick)
e butt of a marijuana cigarette	(roach)
imulants	(ups)
highly potent hallucinogen	(STP)
roin	(horse)
rbiturates	(goof balls)
toxicated (drug or alcohol)	(smashed)
rbiturates	(barbs)
marijuana cigarette	(joint)
inject drugs directly into a vein	(mainline)
sniff powdered narcotics into nostrils	(snort)
shish, marijuana	(hash)
e police	(man)
ing "high" on hallucinogens	(trip)

snort	19.	To smoke a marijuana cigarette
Trip	20.	Methedrine
Bum trip	21.	Anxious, disturbed
Burned out	22.	Off drugs
Clean	23.	A sclerotic condition of the veins resulting from continued puncturing
Drop a cap	24.	A cache of narcotics
Grass	25.	Under the influencd of narcotics
Kilo	26.	A large amount of narcotics
Outfit	27.	The materials and equipment used by an addict to i intravenously
Stash	28.	Take a dose of LSD
Stoned	29.	Marijuana
Up tight	30.	An unpleasant experience with LSD
Bennies	31.	Benzedrine
Blow one's mind	32.	Amphetamines
Cold turkey	33.	informer
Gun	34.	A hypodermic needle
On a trip	35.	Police in neighbothood, a shake-down or search
Pill freak	36.	Sudden drug withdrawal

TEACHER INFORMATION (continued)

narijuana cigarette	(blow a stick)
	(meth)
isturbed	(up tight)
	(clean)
condition of the veins resulting from abcesses and uncturing	(burned out)
narcotics	(stash)
influencd of narcotics	(stoned)
ount of narcotics	(kilo)
als and equipment used by an addict to inject a drug sly	(outfit)
e of LSD	(drop a cap)
	(grass)
ant experience with LSD	(bum trip)
e	(bennies)
es	(truck drivers)
	(stoolie)
ic needle	(gun)
neighbothood, a shake-down or search	(rumble)
g withdrawal	(cold turkey)

TEACHER INFORMATION (continue

Rumble	37. To break with present reality
Stoolie	38. Under the influence of drugs
Truck dirvers	39. Under the influence of LSD or other hallucinogens
Turned on	40. Dangerous drug user
Dime bag	41. Drug users home
High	42. Dexedrine
Hooked	43. A ten-dollar purchase of narcotics
Juice-head	44. User of liquor
Pad	45. Dark shades or glasses
Pep pills	46. Methedrine, usually injected
Oranges	47. A marijuana cigarette
Reefer	48. Addicted
Speed	49. Under the influence of drugs
Tea shades	50. Stimulants
Downs	51. Money
Flash back	52. To inject drugs
Hard stuff	53. Directly into the vein
Intravenous	54. A later repeat trip from the same dose
Junkie	55. Morphine, cocaine, or heroin

ak with present reality	(blow one's mind)
the influence of drugs	(turned on)
the influence of LSD or other hallucinogens	(on a trip)
ous drug user	(pill freak)
sers home	(pad)
ine	(oranges)
dollar purchase of narcotics	(dime bag)
f liquor	(juice-head)
hades or glasses	(tea shades)
rine, usually injected	(speed)
juana cigarette	(reefer)
ed	(hooked)
the influence of drugs	(high)
lants	(pep pills)
	(paper)
ject drugs	(shoot up)
tly into the vein	(intravenous)
er repeat trip from the same dose	(flashback)
ine, cocaine, or heroin	(hard stuff)

TEACHER INFORMATION (continued)

Mary jane	56.	Depressants
Paper	57.	Marijuana
Pot	58.	A narcotic addict
Shoot up	59.	In possession of narcotics
Straight	60.	Marijuana

TEACHER INFORMATION (continued)

(downs)

(mary jane)

addict (junkie)

on of narcotics (straight)

(pot)

TEACHER INFORMATION (continued

SLANG TERMS

A	Benzedrine, dexedrine, and methedrine
A-Bomb	Mixture of marijuana and heroin
Abe	Five dollar bill (also Lincoln, nickel, fin)
Acapulco Gold	Marijuana smuggled across the border from Mexico into the U.S
Ace	(1) One-year sentence; bullet; (2) one of anything; (3) an
Acid	LSD
Acid head	An abuser of LSD
Action	(1) Selling of narcotics; (2) anything pertaining to crimina
Artillery	Equipment for injecting drugs
Backtrack	To withdraw the plunger of a syringe before injecting drugs t proper position
Bad seed	Mescaline - peyote
Bad trip	An unpleasant experience with LSD
Bag	A container of drugs
Bagman	A drug supplier
Bale	A pound of marijuana
Ball	A party
Balloon	A small packet of narcotics
Bang	To inject drugs
Bamboo	An opium pipe, gong-gonger, dream stick, hop stick, saxophone

TEACHER INFORMATION (continued)

SLANG TERMS

ine, dexedrine, and methedrine

of marijuana and heroin

llar bill (also Lincoln, nickel, fin)

na smuggled across the border from Mexico into the U.S.

e-year sentence; bullet; (2) one of anything; (3) an ace note; one dollar bill

er of LSD

lling of narcotics; (2) anything pertaining to criminal action

nt for injecting drugs

draw the plunger of a syringe before injecting drugs to make sure the needle is in
position

ne - peyote

easant experience with LSD

iner of drugs

supplier

of marijuana

packet of narcotics

ct drugs

m pipe, gong-gonger, dream stick, hop stick, saxophone, stem, crock, log

Barbs	Barbiturates
Bathtub	Refers to LSD made in home or improvised places
Battes	Injectable amphetamines
Bean	Capsule - Benzedrine tablet or capsule
Been had	Arrested
Belt	(1) Euphoria following an injection of narcotics; (2) a s injected
Bennies	Benzedrine (brand of amphetamine sulfate, Smith, Kline, a
Bernice	Cocaine
Big C	Cocaine
Big John	The police
Bindle	A small quantity or packet of narcotics
Birdle	A small quantity or packet of narcotics
Bird's eye	Extremely small amount of narcotics
Biz	Equipment for injecting drugs
Black and Whites	Patrol car or policeman
Black Russian	Dark colored very potent hashish
Blanks	Poor quality narcotics
Blasted	Under the influence of drugs, to be intoxicated by a dru

TEACHER INFORMATION (continued)

es

LSD made in home or improvised places

amphetamines

Benzedrine tablet or capsule

ia following an injection of narcotics; (2) a shot or quantity of drugs to be
ed

(brand of amphetamine sulfate, Smith, Kline, and French Laboratories) tablets

uantity or packet of narcotics

uantity or packet of narcotics

small amount of narcotics

for injecting drugs

r or policeman

red very potent hashish

ity narcotics

influence of drugs, to be intoxicated by a drug

Blast a stick or joint	To smoke a marijuana cigarette
Blow a stick	To smoke a marijuana cigarette
Blow one's mind	To break with present reality
Blue devils	Amytal (brand of amobarbital, Eli Lilly and Company) capsule
Blue heavens	Amytal (a barbiturate-amobarbital)
Blue velvet	Paregoric and an antihistamine (a combination of paregoric a use)
Bombido	(Bombita) injectable amphetamine
Boo	Marijuana
Boost	To shoplift
Booster stick	(1) cigarette of treated marijuana, reputedly potent; (2) an which is dipped in a concentrated essence of marijuana prese and inhaled
Boxed	In jail
Boy	Heroin
Bread	Money
Bull	A federal narcotic agent, a police officer
Bum rap	An arrest or conviction for crime one didn't commit
Bum trip	An unpleasant experience with LSD
Bum steer	False or unreliable information about drugs or peddlers - al
Bummer	An unpleasant experience with LSD

TEACHER INFORMATION (continued)

ke a marijuana cigarette

ke a marijuana cigarette

ak with present reality

(brand of amobarbital, Eli Lilly and Company) capsules

(a barbiturate-amobarbital)

ric and an antihistamine (a combination of paregoric and antihistamines for intraveneous

ta) injectable amphetamine

ana

plift

garette of treated marijuana, reputedly potent; (2) an ordinary cigarette, the tip of is dipped in a concentrated essence of marijuana preserved in alcohol - lit, blown out, haled

l

ral narcotic agent, a police officer

est or conviction for crime one didn't commit

leasant experience with LSD

or unreliable information about drugs or peddlers - also bogus trip, bum wire, jive

leasant experience with LSD

Burned	To receive phony or badly diluted drugs
Burned out	A sclerotic condition of the veins resulting from
Business man's trip	Amphetamine - short trip
Bust a mainline	To inject drugs intravenously
Busted	To be arrested
Buttons	Sections of the peyote cactus
Cactus	Peyote
Caballo	Heroin
Can	Approximately an ounce of marijuana
Candy	Barbiturates
Cap	A container of drugs (usually a capsule, usually
Cartwheels	Amphetamine sulfate (round, white, double-scored
Cecil	Cocaine
Champ	Drug user who won't reveal his supplier, even und
Charley	Cocaine
Charas	Form of marijuana in India; hashish
Charge	Marijuana
Charged up	Under the influence of drugs
Chipping	Taking small amounts of drugs on an irregular bas

TEACHER INFORMATION (continued)

phony or badly diluted drugs

c condition of the veins resulting from abscesses and continued puncturing

e - short trip

drugs intravenously

sted

f the peyote cactus

ely an ounce of marijuana

es

r of drugs (usually a capsule, usually heroin)

e sulfate (round, white, double-scored tablets)

who won't reveal his supplier, even under pressure

rijuana in India; hashish

influence of drugs

ll amounts of drugs on an irregular basis

Chippy	An abuser taking small, irregular amounts - also, a prostitute
Clean	Off drugs
Clear up	To withdraw from drugs
Coasting	Under the influence of drugs
Coasts to coasts	Amphetamines
Cocktail	Marijuana butt attached to a regular cigarette
Coke	Cocaine
Cokie	A cocaine addict
Cold turkey	Sudden drug withdrawal
Come down	End of drug experience
Coming down	Emerging from an LSD experience
Connect	To purchase drugs
Connection	A drug supplier
Cooker	Receptacle for heating drugs before using intravenously
Cook up a pill	To prepare opium for smoking
Contact high	Vicarious experience that occurs by being with someone who is on a "trip"
Co-pilots	Amphetamine tablets
Cop	To purchase drugs, steal

Corine	Cocaine
Cotics	Narcotics
Cottonhead	User who recooks the cotton fibers found in cookers when t are in need of an injection
Crater	Gaping hole in a vein caused by repeated injections at the
Crystals	Methedrine
Cube	Sugar cube impregnated with LSD; a non-user of drugs
Cubehead	Frequent user of LSD
Cut	To adulterate a narcotic by adding milksugar
Dabble	To take small amounts of drugs on an irregular basis
Dagga	Marijuana - India
D.D.	A fatal dose of narcotics or other drug
Dealer	A drug supplier
Deck	A small packet of narcotics (heroin)
Dexies	Dexedrine (brand of dextroamphetamine sulfate, Smith, Kli
Dig	Appreciate, enjoy, understand
Dime bag	A ten-dollar purchase of narcotics
Dirty	In possession of narcotics; liable to arrest if searched
Dollies	Delephine (brand of methadone hydrochloride, Eli Lilly an

TEACHER INFORMATION (continued)

s

recooks the cotton fibers found in cookers when their supply is up and they
eed of an injection

ole in a vein caused by repeated injections at the same spot

ne

be impregnated with LSD; a non-user of drugs

user of LSD

erate a narcotic by adding milksugar

small amounts of drugs on an irregular basis

na - India

dose of narcotics or other drug

supplier

packet of narcotics (heroin)

ne (brand of dextroamphetamine sulfate, Smith, Kline and French Laboratories) tablets

ate, enjoy, understand

ollar purchase of narcotics

ession of narcotics; liable to arrest if searched

ne (brand of methadone hydrochloride, Eli Lilly and Company) tablets

Domino	To purchase drugs
Doojee	Heroin
Dope	Any narcotic
Doper	Regular user of narcotics
Double Blind	Term used in research to indicate that neither the patient or know which of several drugs or placebo is given on any occasio condition if results are attributed to the effects of the drug
Double trouble	Tuinal (brand of amobarbital sodium and secobarbital sodium,
Do up	Supply of marijuana cigarettes
Down	Depressed feeling after drugs wear off
Downs	Depressants
Drivers	Amphetamines
Drop	To take by mouth
Drop a cap	Take a dose of LSD
Dropped	Arrested
Dummy	Purchase which did not contain narcotics
Dust	Cocaine
Dynamite	Narcotics of high potency
Ego games	A deprecative term applied by LSD users to social conformity occupations and responsibilities of the majority of people

TEACHER INFORMATION (continued)

rchase drugs

n

arcotic

ar user of narcotics

used in research to indicate that neither the patient or subject nor the experimenter which of several drugs or placebo is given on any occasion. Considered a necessary tion if results are attributed to the effects of the drug as pharmacologic agent.

l (brand of amobarbital sodium and secobarbital sodium, Eli Lilly and Company) capsules

y of marijuana cigarettes

ssed feeling after drugs wear off

ssants

tamines

ke by mouth

a dose of LSD

sted

ase which did not contain narcotics

ine

otics of high potency

precative term applied by LSD users to social conformity and to the normal activities, pations and responsibilities of the majority of people

Ends	Money
Experience	An LSD "trip"
Eye-openers	Amphetamines
Factory	Equipment for injecting drugs
Fence	One who acts as a source of stolen goods from stolen goods and thus can afford his drugs
Fix	An injection of narcotics
Flake	Cocaine
Flashback	A later repeat "trip" from the same dose
Flea powder	Poor quality narcotics
Flip	To become psychotic
Flip out	To lose mental control after using drugs
Floating	Under the influence of drugs (to be intoxicat
Fly	Take narcotics
Flying	Under the influence of marijuana
Footballs	Oval-shaped amphetamine sulfate tablets (a co
Freak out	To have unpleasant reactions while on a hallu
Fresh and sweet	Out of jail
Fruit salad	Taking a mixture of pills

TEACHER INFORMATION (continued)

ey

LSD "trip"

netamines

ipment for injecting drugs

who acts as a source of stolen goods from addict. Addict is in turn paid for the len goods and thus can afford his drugs

injection of narcotics

aine

ater repeat "trip" from the same dose

r quality narcotics

become psychotic

lose mental control after using drugs

er the influence of drugs (to be intoxicated by drugs)

e narcotics

er the influence of marijuana

l-shaped amphetamine sulfate tablets (a combination of dextroamphetamine and amphetamine)

have unpleasant reactions while on a hallucinogenic "trip"

of jail

king a mixture of pills

TEACHER INFORMATION (continued)

Gage	Marijuana
Ganga	Marijuana (superior grade)
Gassed out	Overcome emotionally by an experience
Gassing	Sniffing gasoline fumes
Gee-head	Paregoric abuser
Geetis	Money
Geezer	A narcotic injection
Get high	Smoke marijuana
Gimmicks	The equipment for injecting drugs
Give wings	Inject somebody with heroin by vein
Girl	Cocaine
Glad rag	Cloth material or handkerchief saturated with the chemical
Gluey	Glue-sniffer
Gold dust	Cocaine
Goods	Narcotics
Good trip	Happy experience with psychedelics
Goofballs	Barbiturates
Goofed up	Under the influence of barbiturates
Gow-head	An opium addict

Grasshopper	Marijuana
Greenies	Green, heart-shaped tablets of dextroamphetamine sulfate ar
Griefo	Marijuana
Groovy	Enjoyable
Gun	A hypodermic needle
H	Heroin
Hand-to-hand	Person-to-person delivery
Hang-up	A personal problem
Happening	A pseudo experience obtained through the use of lights and of experience that one has with a drug
Happy cigarette	Marijuana cigarette
Happy dust	Cocaine
Hard stuff	Morphine, cocaine or heroin
Harness bulls	Uniformed officers
Harry	Heroin
Hash	Hashish; marijuana
Hawk	LSD
Hay	Marijuana
Hayhead	Marijuana user

TEACHER INFORMATION (continued)

rijuana

een, heart-shaped tablets of dextroamphetamine sulfate and amobarbital

rijuana

joyable

hypodermic needle

roin

rson-to-person delivery

personal problem

pseudo experience obtained through the use of lights and sound; to have the same type experience that one has with a drug

rijuana cigarette

caine

rphine, cocaine or heroin

iformed officers

roin

shish; marijuana

D

arijuana

arijuana user

TEACHER INFORMATION (continued)

Hearts	Benzedrine or dexedrine (brands of amphetamine sulfate and dextroamphet Smith, Kline and French Laboratories) heart-shaped tablets
Heat	The police
Heavenly blues	A type of morning glory seed, or LSD
Heeled	Having narcotics; having money
Hemp	Marijuana
High	Under the influence of drugs
Hikori	Mescaline - peyote
Hip (Hep)	To understand
Hit	To purchase drugs, an arrest
Hocus	A narcotic solution ready for injection
Hog	An addict who uses all he can get his hands on
Holding	Possessing narcotics
Hooked	Addicted
Hophead	Narcotic addict
Hopped up	Under the influence of drugs
Hot shot	A fatal dosage
Horse	Heroin

TEACHER INFORMATION (continued)

Benzedrine or dexedrine (brands of amphetamine sulfate and dextroamphetamine sulfate, Smith, Kline and French Laboratories) heart-shaped tablets

The police

A type of morning glory seed, or LSD

Having narcotics; having money

Marijuana

Under the influence of drugs

Mescaline - peyote

To understand

To purchase drugs, an arrest

A narcotic solution ready for injection

An addict who uses all he can get his hands on

Possessing narcotics

Addicted

Narcotic addict

Under the influence of drugs

A fatal dosage

Heroin

Hype	Narcotic addict
Ice cream habit	A small, irregular drug habit
In	Belonging or accepted by group
Intravenous	Directly into the vein
Jab	To inject drugs
Jag	Intoxication after using benzedrine
Jive or jive stick	Marijuana
Job	To inject drugs
Joint	A marijuana cigarette
Jolly beans	Pep pills, amphetamines
Jolt	An injection of narcotics; effects of the drug
Jones	The habit, an addict
Joy-pop	To inject small amounts of drugs irregularly
Joy powder	Heroin
Juice-head	User of liquor
Junk	Narcotics
Junkie	A narcotic Addict
Juvies	Juvenile officers

Kick or kick habit	To abandon a drug habit
Kick parties	Parties or sessions where LSD is used
Kif	Marijuana in North Africa
Kilo	Large amount of narcotics
Lace	Money
L.A. turnabouts	Amphetamines
Layout	The equipment for injecting drugs
Lemonade	Poor heroin
Lid	Approximately one ounce of marijuana
Lid poppers	Amphetamines
Lipton tea	Poor quality narcotics
Lit up	Under the influence of drugs
Locoweed	Marijuana
Long green	Money
M	Morphine
Machinery	Equipment for injecting drugs
Mainline	To inject drugs directly into a vein
Mainliner	One who injects narcotics into a vein

Make a buy	To purchase drugs
Make a meet	To purchase drugs
Man	The police
Manicure	High-grade marijuana (i.e., to seeds or stems)
Mary jane	Marijuana
Match box	Marijuana container; quantity of marijuana
Member	Negro or some other than a white person
Mellow yellow	Banana peel
Mesc	Mescaline, the alkaloid in peyote
Mescal - Mescal bean	Mescaline or peyote
Meth	Methedrine (also known as desexyn) an amphetamine
Methhead	Chronic user of methedrine
Meth monster	User of speed (Methedrine)
Mezz	Marijuana
Mickey Finn	Chloral Hydrate
Mikes	Micrograms (millionths of a gram)
Miss emma	Morphine
Moje	Narcotics

Moon	Peyote
Mor a grifa	Marijuana
Mugglehead	Marijuana user
Muggles	Marijuana
Mutah	Marijuana
Naree	Police officer (the law)
Narks	Slang term for the law enforcement officials concerned with narcotic abuse
Needle	Hypodermic syringe
Nickel bag	A five-dollar purchase of narcotics
Nimby	Nembutal (brand of pentebarbital, Abbott Laboratories) capsules
Nod	To behave in a sleepy or lethargic manner
OD	Overdose
Off	Withdrawn from drugs
On a rip	Under the influence of LSD
On a trip	Under the influence of LSD or other hallucinogens
On the beam	Under the influence of marijuana
On the nod	Under the influence of drugs
On the street	Out of jail
On the stuff	Regular user or addict

Oranges	Dexedrine (brand of dextroamphetamine sulfate, Smith, Kline an tablets
Outfit	The materials and equipment used by an addict to inject a drug
Out of the body	The feeling a person experiences while he is under the influen
Out of this world	Under the influence of marijuana
Outside myself	The feeling a person experiences while under the influence of
Pack	A packet of heroin
Panic	Sudden shutting off of drug supply
Pad	Drug user's home, apartment
Paper	A prescription or packet of narcotics
Peaches	Benzedrine (brand of amphetamine sulfate, Smith, Kline and Fr
Peanuts	Barbiturates
P.G. or P.O.	Paregoric
Peddler	Dealer in drugs
Pep Pills	stimulants
Piece	A container of drugs
Pinks	Seconal (brand of secobarbital, Eli Lilly and Company) capsul
Pill Freak	Dangerous drug user
Pill Head	Dangerous drug user

TEACHER INFORMATION (continued)

drine (brand of dextroamphetamine sulfate, Smith, Kline and French Laboratories)
ets

materials and equipment used by an addict to inject a drug intravenously

feeling a person experiences while he is under the influence of LSD

r the influence of marijuana

feeling a person experiences while under the influence of LSD

acket of heroin

den shutting off of drug supply

g user's home, apartment

rescription or packet of narcotics

zedrine (brand of amphetamine sulfate, Smith, Kline and French Laboratories) tablets

biturates

egoric

ler in drugs

mulants

container of drugs

conal (brand of secobarbital, Eli Lilly and Company) capsules

ngerous drug user

ngerous drug user

TEACHER INFORMATION (continued)

Plant	Cache of narcotics
Point	Paraphernalia for injecting narcotics
Pop	To inject drugs
Pot	Marijuana
Pothead	Marijuana user
Pot party	Marijuana party
Pure	Pure narcotics of very good grade
Purple hearts	Luminal
Pusher	Drug seller or supplier
Quill	A folded matchbox cover from which narcotics are sniffed through the nose
Rainbows	Tuinal (brand of amobarbital sodium and secobarbital sodium, Eli Lilly and Compa capsules
Rap	Rapport
Reader	A prescription
Red birds	Seconal
Red devils	Seconal (brand of secobarbital, Eli Lilly and Company) capsules
Reefer	A marijuana cigarette
Re-entry	A return from a "trip"
Roach	The butt of a marijuana cigarette

Rope	Marijuana
Roses	Benzedrine (brand of amphetamine sulfate, Smith, Kline an
Royal blue	LSD
Rumble	Police in the neighborhood; a shake-down or search
Runner	Smuggler of illegal drugs
Sam	Federal narcotic agents
Satch cotton	Cotton used to strain narcotics before injection
Seat	Heroin
Schmeck	Heroin
Score	To purchase drugs
Script	A doctor's prescription
Seccies	Barbiturates
Seggy	Seconal (brand of secobarbital, Eli Lilly and Company) ca
Sex juice	Aphrodisiac, supposedly a sex stimulant drug
Shake the habit	Completely conquer the habit
Shooting gallery	A place where narcotic addicts inject drugs
Shoot up or shoot	To inject drugs
Shrink	Psychiatrist (head shrinker)

TEACHER INFORMATION (continued)

Marijuana

Benzedrine (brand of amphetamine sulfate, Smith, Kline and French Laboratories) tablets

LSD

Police in the neighborhood; a shake-down or search

Smuggler of illegal drugs

Federal narcotic agents

Cotton used to strain narcotics before injection

Heroin

Heroin

To purchase drugs

A doctor's prescription

Barbiturates

Seconal (brand of secobarbital, Eli Lilly and Company) capsules

Aphrodisiac, supposedly a sex stimulant drug

Completely conquer the habit

A place where narcotic addicts inject drugs

To inject drugs

Psychiatrist (head shrinker)

TEACHER INFORMATION (continued)

Sitter	An experienced LSD user who helps or guides a new user
Skin popper	Occasional user of narcotics
Slammed	In jail
Smack	Heroin
Smashed	Intoxicated (drug or alcohol)
Smoke	Wood alcohol
Sneeqe it out	Attempt to break the habit
Sniff	To sniff narcotics (usually heroin or cocaine) through the nose
Snort(ing)	To sniff powdered narcotics into nostrils
Snow	Cocaine
Speed	Methamphetamine, usually injected for rapid result
Speedball	An injection which combines a stimulant and depressant - often cocaine mixed wit morphine or heroin
Speedfreak	Compulsive high-dose user of methamphetamine
Spike	The needle used for injecting drugs
Square	A non-addict
Stack	A quantity of marijuana cigarettes
Stardust	Cocaine
Stash	A cache of narcotics

Stoned	Under the influence of narcotics
Stonehead	Drug bum, inveterate user
Stool	Informer
Stoolie	Informer
STP	A highly potent hallucinogen
Straight	In possession of narcotics
Strong out	Regular user of narcotics or addict
Strung out	Addicted
Stuff	Narcotics
Sugar	Powdered narcotics
Sugar cube	LSD
Sugar daddy	Drug supplier
Sunshine	LSD
Supplier	Drug source
Sweet lucy	Marijuana
Swingman	A drug supplier
T	Marijuana
Take a band	Take drugs
Take-off	Marijuana

TEACHER INFORMATION (continued)

Taste	Small quantity of narcotics usually given as sample or as reward
Tea shades	Dark shades or glasses used when taking pot and LSD due to dilated pupils
Texas tea or tea	Marijuana
The man	Dealer in drugs
Things	Various amounts of narcotics
Thoroughbred	A high-type hustler who sells pure narcotics
To be dirty	To have drugs
To connect	To buy drugs
To be flush	To understand
To be hep	To understand
To be hip	To understand
To hit on	To buy drugs
To make a meet	To buy drugs
To make it	To try to buy drugs
To have savvy	To understand
Toke up	To light a marijuana cigarette
Tooies	Tuinal (brand of amobarbital sodium and secobarbital sodium, Eli Lilly and Compan capsules
Torch up	Light a marijuana cigarette

Toss	Search
Tour guide	An experienced LSD user who helps or guides a new user
Toxy	The smallest container of prepared opium
Tracks	Scars along veins from many injections
Travel agent	An experienced LSD user who helps or guides a new user
Trip, tripping	Being "high" on hallucinogens, particularly LSD
Trip out	To take drug and have the drug experience, good or bad (bum trip)
Truck drivers	Amphetamines
Turkey	A capsule purported to be narcotic but filled with a non-narcotic substance
Turned off	Withdrawn from drugs
Turned on	Under the influence of drugs
Turps	Elixis of terpin hydrate with codeine, a cough syrup
Twist	Marijuana cigarette
Uncle	Federal narcotic agent
Ups	Stimulants
Up tight	Anxious, disturbed
Uppers	Stimulants, cocaine, and psychedelics
Vic	One who has been given a hot shot, a victim
Wake-ups	Amphetamine

TEACHER INFORMATION (continued)

Wakowi	Mescaline
Washed up	Withdrawn from drugs
Wasted	Under the influence of drugs
Weed	Marijuana
Weehead	Marijuana user
Weekend habit	A small, irregular drug habit
Wedding bells	LSD
Whiskers	Federal narcotic agents
Whites	Amphetamine sulfate tablets
White stuff	Morhpine
Wired	Under the influence of drugs (usually stimulants)
Works	Equipment for injection of drugs
Yellow-jackets	Nembutal (brand of pentobarbital, Abbot Laboratories) capsules (solid yellow)
Yen	Desire for
Yen hok	(Hook) instrument used in opium smoking; needle used to cook opium pellets
Yen Shee	Opium ash
Zunked	Intoxicated (drug or alcohol) usually addicted to hard drugs

VIII. GLOSSARY

addict	refers to any person who habitually uses any habit-forming by the Harrison Act of 1914; that is alkaloids of the opiu hemp, and peyote in all its forms.
addiction	the classic term used to describe dependency on a drug; th by law enforcement officers rather than medical personnel; have been identified: compulsion for a drug, tolerance, ps dependence, and a danger to the individual and the people a
amphetamine	any of a group of compounds which exert a stimulating acti of the brain and the central nervous system.
antihistamine	a group of drugs developed in the last thirty years to trea such as asthma, hay fever, etc.
barbiturates	a highly addicting group of depressant drugs, varying in us anesthetics; although highly useful in medicine, they can
counterfeit drugs	a product manufactured illegally in an attempt to defraud t a danger to the public in two ways: (1) there is no guara or quality of the ingredients used; and (2) for those who n prescribed medicinal use, it is devoiding them of proper tr
dependence	this is a general term, in recent years preferred by physi it is a state of psychic or physical need, or both, result a drug on a periodic or continual basis; it is usually ass drug, that is, drug specific
depressant	a synonym for sedative or hypnotic; it is any of a group o central nervous system
drug	any chemical compound which produces an effect on the body positive or negative

VIII. GLOSSARY

› any person who habitually uses any habit-forming drug which is controlled
arrison Act of 1914; that is alkaloids of the opium or coca leaves, Indian
d peyote in all its forms.

sic term used to describe dependency on a drug; this term has been favored
nforcement officers rather than medical personnel; characteristics of addiction
n identified: compulsion for a drug, tolerance, psychological and physical
ce, and a danger to the individual and the people around him.

group of compounds which exert a stimulating action on the cerebral cortex
rain and the central nervous system.

of drugs developed in the last thirty years to treat allergic conditions
asthma, hay fever, etc.

addicting group of depressant drugs, varying in use from sleep producers to
tics; although highly useful in medicine, they can be intoxicating and dangerous

ct manufactured illegally in an attempt to defraud the public; such a drug is
r to the public in two ways: (1) there is no guarantee as to the amount, kind,
ity of the ingredients used; and (2) for those who need the drug for some
bed medicinal use, it is devoiding them of proper treatment

a general term, in recent years preferred by physicians over "addiction;"

state of psychic or physical need, or both, resulting from administration of
on a periodic or continual basis; it is usually associated with a particular
hat is, drug specific

ym for sedative or hypnotic; it is any of a group of drugs which depress the
nervous system

mical compound which produces an effect on the body; this effect may be either
e or negative

GLOSSARY (continued)

drug abuse	the self administration of excessive quantities of drugs leading to and psychological dependence, mental confusion, and other forms of a it is also considered to be the taking of drugs for the side effects
drug misuse	the inappropriate use of a drug either through improper administrati a physician, a pharmacist or the individual; this term includes the medical reasons, but different from those intended when the drug was prescribed
euphoria	a feeling of well-being produced by various drugs, which results at a general depression of cortical regions in the brain along with a r tension and inhibitory control
exempt narcotics	that group of narcotic drugs which can be purchased without prescrip law requires the purchaser's signature
habituation	a less binding condition than addiction, but still occurring from re its characteristics include desire for the drug, some psychic depend harm primarily for the user of the drug
hallucination	distortions of the perception processes; perceptions of people and experiences of which there is no cause or explanation
hallucinogens	the term given to a group of drugs which alter the processes of the those involving perception and orientation
methadone	a drug now being used in the treatment of opiate addicts; it is sai hunger, and develop a tolerance which blocks the euphoric effect of
narcotic drugs	means coca leaves, opium, cannabis, and every other substance, neit physically distinguishable from them; any other drugs to which the laws may now apply; and any drug found (by the State Commissioner o competent state officer after reasonable notice and opportunity for an addiction-forming or addiction-sustaining liability similar to m from the effective date of determination of such finding (by said S Health or other competent state officer)

GLOSSARY (continued)

the self administration of excessive quantities of drugs leading to tolerance, physical and psychological dependence, mental confusion, and other forms of abnormal behavior; it is also considered to be the taking of drugs for the side effects that they produce

the inappropriate use of a drug either through improper administration on the part of a physician, a pharmacist or the individual; this term includes the use of a drug for medical reasons, but different from those intended when the drug was originally prescribed

a feeling of well-being produced by various drugs, which results at least in part, from a general depression of cortical regions in the brain along with a reduction of anxiety, tension and inhibitory control

that group of narcotic drugs which can be purchased without prescription, however, the law requires the purchaser's signature

a less binding condition than addiction, but still occurring from repeated use of a drug; its characteristics include desire for the drug, some psychic dependence, and potential harm primarily for the user of the drug

distortions of the perception processes; perceptions of people and objects; and sensory experiences of which there is no cause or explanation

the term given to a group of drugs which alter the processes of the mind, particularly those involving perception and orientation

a drug now being used in the treatment of opiate addicts; it is said to relieve narcotic hunger, and develop a tolerance which blocks the euphoric effect of heroin

means coca leaves, opium, cannabis, and every other substance, neither chemically nor physically distinguishable from them; any other drugs to which the federal narcotic laws may now apply; and any drug found (by the State Commissioner of Health or other competent state officer after reasonable notice and opportunity for hearing) to have an addiction-forming or addiction-sustaining liability similar to morphine or cocaine, from the effective date of determination of such finding (by said State Commissioner of Health or other competent state officer)

GLOSSARY (continued)

physical dependence	a state of the body brought about by repeated or continu characterized by the development of severe acute physica is removed
psychedelic	a term meaning mind-expanding; associated with the hallu LSD; most authorities believe that the person feels that productive mind, but in fact he does not
psychological dependence	a strong mental attachment to a drug which arouses from some emotional or psychic need of an individual; charact dependence is more difficult to break than physical depe
sedatives	chief class of drugs, of which the most commonly abused are also of this group
side effects	abnormal reactions from the use of drugs; sometimes in d the foremost factor
stimulants	chief class of drugs, of which the most commonly abused of drugs stimulate the central nervous system by produci fulness, a temporary rise in blood pressure and respirat
tolerance	the gradual conditioning of the body toward a drug; it i of the drug in order to recreate the feeling of well-bei for taking the drug; it is this characteristic which hop a snowballing life of no return
tranquilizers	are a type of sedative in that they depress portions of is, those areas responsible for anxiety and tension; nor hangover and sedative effects

GLOSSARY (continued)

a state of the body brought about by repeated or continuous use of a drug that is characterized by the development of severe acute physical symptons when the drug is removed

a term meaning mind-expanding; associated with the hallucinogenic drugs, particularly LSD; most authorities believe that the person feels that he has a more creative or productive mind, but in fact he does not

a strong mental attachment to a drug which arouses from a drug's ability to satisfy some emotional or psychic need of an individual; characteristically, this type of dependence is more difficult to break than physical dependence

chief class of drugs, of which the most commonly abused are barbiturates; tranquilizers are also of this group

abnormal reactions from the use of drugs; sometimes in drug abuse the side effects become the foremost factor

chief class of drugs, of which the most commonly abused are the amphetamines; this group of drugs stimulate the central nervous system by producing excitation, alertness, wakefulness, a temporary rise in blood pressure and respiration

the gradual conditioning of the body toward a drug; it is the ever-increasing dosage of the drug in order to recreate the feeling of well-being that once was the main reason for taking the drug; it is this characteristic which hopelessly chains the individual to a snowballing life of no return

are a type of sedative in that they depress portions of the central nervous system, that is, those areas responsible for anxiety and tension; normally they do not produce general hangover and sedative effects

ALCOHOL

Concepts	Teacher Materials
I. Introduction	Introductory statement to teachers
A. Importance of learning about alcohol	Overview
1. To better understand its	
a. social effects b. economic effects c. biological effects d. nature and uses	
II. Meaning of the word "alcohol"	Alcohol Education for Classroom an Community, p. 69
A. In the 10th century	Alcohol, by Berton Roueche, p. 21
1. Called "al-kohl" by Arabic physician 2. Finely ground powder used to color eyes	
B. Scientific meaning	
Compound with OH group attached to carbon atom	
C. Beverage	Basic Information on Alcohol, p. 2
Ethyl alcohol - C_2H_5OH	The Problem, Alcohol and Narcotics
D. Other meanings	The Story of Industrial Alcohol, p
1. Solvent	Basic Information on Alcohol, pp.
a. medical solutions b. cleaning solutions	

	Teacher Materials	Student Materials
	Introductory statement to teachers	
earning about	Overview	
nderstand its		
effects ic effects ical effects and uses		
d "alcohol"	Alcohol Education for Classroom and Community, p. 69	Alcohol Education For Classroom and Community, p. 69
ntury	Alcohol, by Berton Roueche, p. 21	
-kohl" by sician ound powder lor eyes		
ning		
ith OH group o carbon atom		
	Basic Information on Alcohol, p. 23	
ohol - C_2H_5OH	The Problem, Alcohol and Narcotics, p. 7	
s	The Story of Industrial Alcohol, p. 16	
	Basic Information on Alcohol, pp. 91, 93	
al solutions ing solutions		

Audio Visual	Motivating Questions	Ac
Material for introduction 1. Yeast cell projected on screen 2. 35mm slides on history 3. Lift on advertisement - #1	Why learn about alcohol? Why do doctors advise patients with ulcers to avoid drinking? Is drinking alcoholic beverages inexpensive? What things do adults like about drinking alcohol? What are some laws concerning the drinking of alcohol? Why do we have these laws?	Ob ma di
Transparency: Structure of ethyl alcohol - #2		
Transparency: Amounts and uses of industrial alcohol, #3 (a, b, w/overlays, c)	What things do you have at home that have alcohol in them? How is alcohol useful?	Ha ir Wi ma a

	Motivating Questions	Activities
n	Why learn about alcohol?	Observation of introductory materials, note taking, and discussion.
ted on screen story nent - #1	Why do doctors advise patients with ulcers to avoid drinking?	
	Is drinking alcoholic beverages inexpensive?	
	What things do adults like about drinking alcohol?	
	What are some laws concerning the drinking of alcohol? Why do we have these laws?	
l alcohol - #2		
	What things do you have at home that have alcohol in them?	Have students make list of things in home that have alcohol in them. Write library paper on common materials that are made from alcohol.
of industrial , w/overlays, c)	How is alcohol useful?	

ALCOHOL (continued)

Concepts	Teacher Materials	Studen
2. Personal meanings	Drinking Among Teen-agers, pp. 83 - 85	
a. Pain caused by disinfecting cut b. Drunkeness c. Party d. Fun e. Bootlegging f. Hangover g. Myths about alcohol		
III. History of Alcohol	Alcohol, Berton Roueche, pp. 8-13	Script,
A. Discovery	Script for slide series	Drinki p. 42
1. Date not known Occurred somewhere in the pre-history of man	Drinking and Intoxication, p. 42 (Suggested answer for evaluation sheet) The Problem: Alcohol - Narcotics, p. 24	Drinki p. 42
2. Essentials needed for the discovery of alcohol a. Water tight containers b. Goat skins, clay jars c. Storage practices (To save food for lean periods) d. Accidental fermentation of stored food e. Recognition and reproduction of process		

	Teacher Materials	Student Materials
ngs d by disin- t	Drinking Among Teen-agers, pp. 83 - 85	
g		
t alcohol		
	Alcohol, Berton Roueche, pp. 8-13	Script for slides series
	Script for slide series	Drinking and Intoxication, p. 42
n somewhere e-history	Drinking and Intoxication, p. 42 (Suggested answer for evaluation sheet)	Drinking and Intoxication, p. 42
	The Problem: Alcohol - Narcotics, p. 24	
eded for the lcohol		
ht containers s, clay jars ractices food for lean		
l fermentation food on and repro- f process		

Audio Visual	Motivating Questions	Activiti
		Write or meaning students
Transparency: Myths About Alcohol, #4 (a, b, c, d, e)		
Slide series on history of alcohol		
Posters: Carrie Nation Romans drinking Spartan soldier	Was fermentation invented by man? What did man discover in relation to discovery of alcohol? How do scientists find out about events that occurred so long ago?	Researc points o Make car historic

	Motivating Questions	Activities
		Write or discuss personal meaning of alcohol. Let students supply information.
4 (a, b, lcohol		
	Was fermentation invented by man? What did man discover in relation to discovery of alcohol? How do scientists find out about events that occurred so long ago?	Research on other interesting points of history of alcohol. Make cartoons depicting the historical use of alcohol.

ALCOHOL (continued)

Concepts	Teacher Materials	Stude
B. Early civilizations		
1. Eygpt a. Most Eygptians drank, both men and women b. Drank in religious ceremonies, but mostly for inebriety	Drinking and Intoxication, pp. 39, 65 66	Drink pp. 3
2. Greece a. Drinking occurred in most Greek states b. Drank in religious ceremonies and for inebriety	Drinking and Intoxication, p. 39	
3. Sparta a. Believed over-indulgence showed a weakness b. Soldiers on duty were not allowed to drink alcohol	Drinking and Intoxication, p. 36	
4. Rome a. Early Romans drank moderately; death was the penalty for women who drank b. Late Romans over-indulged and women were allowed to drink c. Waited until northern invaders were inebrieted, then killed them	Drinking and Intoxication, pp. 53, 54, pp. 58-61	Drin Pp.

	Teacher Materials	Student Materials
lizations		
st Eygptians drank, th men and women ank in religious remonies, but stly for inebriety	Drinking and Intoxication, pp. 39, 65 66	Drinking and Intoxication, pp. 39, 65, 66
inking occurred in st Greek states ank in religious remonies and for ebriety	Drinking and Intoxication, p. 39	
lieved over-indul- nce showed a weakness ldiers on duty were t allowed to drink cohol	Drinking and Intoxication, p. 36	
rly Romans drank derately; death was e penalty for women o drank te Romans over- dulged and women were lowed to drink ited until northern vaders were inebrieted, hen killed them	Drinking and Intoxication, pp. 53, 54, pp. 58-61	Drinking and Intoxication, pp. 36, 53, 54, 58-61

Audio Visual	Motivating Questions	Activities
	Did civilizations in the past also have problems because of the drinking of alcoholic beverages?	Discuss lesso learned from history of al Read to the c 162 of Book T Alcohol. Hav their views c presented.
	Did they solve their drinking problems?	
	What were some of their methods of controlling the abuse of alcohol?	

Motivating Questions	Activities
Did civilizations in the past also have problems because of the drinking of alcoholic beverages?	Discuss lessons that can be learned from the study of the history of alcohol. Read to the class pp. 161, 162 of Book Teaching About Alcohol. Have students give their views of the situations presented.
Did they solve their drinking problems?	
What were some of their methods of controlling the abuse of alcohol?	

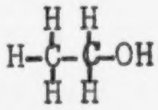
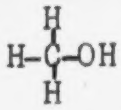
ALCOHOL (continued)

Concepts	Teacher Materials	Student
C. Distillation	Drinking and Intoxication, p. 43	Ditto ha of Alcoh
1. Discovered about 1200 A.D.		
2. Called aqua vitae	Alcohol, by Berton Roueche, p. 25	Ditto:
a. Used as medicine at first		
b. Soon it became a condensed inebriant		
D. American history	Alcohol Education for Classroom and Community, p. 13	Alcohol and Comm
1. Introduced alcohol to North American Indians	Facts About Alcohol, p. 17	
2. Became important beverage in westward movement because of these beliefs		
a. A man could work harder if he had a drink		
b. He could better face hardships		
3. Rum became important factor in the slave trade.	Alcohol, by Berton Roueche, pp. 38, 39	
4. Prohibition began in 1600 and reached a climax in 1919.	Teaching About Alcohol, p. 84, McGraw-Hill	
a. Alcohol blamed for nation's ills	Alcohol Education for Classroom and Community, p. 18.	
b. National movement in U.S. began after World War I		Alcohol and Com
c. Prohibition was a period of civil unrest and civil crime		

	Teacher Materials	Student Materials
	Drinking and Intoxication, p. 43	Ditto hand-out: On the History of Alcohol
00 A.D.	Alcohol, by Berton Roueche, p. 25	Ditto: Script Slide Series
ne at		
a con- nt		
	Alcohol Education for Classroom and Community, p. 13	Alcohol Education for Classroom and Community, p. 13
to North	Facts About Alcohol, p. 17	
everage nt be- iefs		
rk harder ink er face		
nt factor e. in 1600 max in 1919.	Alcohol, by Berton Roueche, pp. 38, 39	
	Teaching About Alcohol, p. 84, McGraw-Hill	
d for ment in ter	Alcohol Education for Classroom and Community, p. 18.	Alcohol Education for Classroom and Community, p. 18
as a il unrest me		

Audio Visual	Motivating Questions	Activitie
	How is distillation of alcohol controlled in the U.S.?	
	Why do we restrict persons from distilling alcohol?	
	Are there any dangers in drinking "home brew" or "moon shine?"	Class stud personalit tion Era.
	Does alcohol help you to do difficult tasks?	Creative
	Do you think prohibition is fair?	Quiz on th
	Why is it unfair?	
	Would some people be better off if there was no alcohol to drink?	Make a lis of alcohol
	Why do chemists use letters rather than words?	
	What is an atom?	
	What are molecules?	
	What is an organic compound?	

Motivating Questions	Activities
How is distillation of alcohol controlled in the U.S.?	
Why do we restrict persons from distilling alcohol?	
Are there any dangers in drinking "home brew" or "moon shine?"	Class study of events and personalities in the Prohibition Era.
Does alcohol help you to do difficult tasks?	Creative dramatics
Do you think prohibition is fair?	Quiz on the history of alcohol
Why is it unfair?	
Would some people be better off if there was no alcohol to drink?	Make a list of different kinds of alcohol found at home.
Why do chemists use letters rather than words?	
What is an atom?	
What are molecules?	
What is an organic compound?	

Concepts	Teacher Materials	Student M
IV. Nature of Alcohol		
A. Chemical	Alcohol Education for Classroom and Community, p. 39	
1. Composed of C, H, O atoms		
2. Many different kinds of alcohol a. ethyl b. methyl c. isopropyl d. butyl	Teaching About Alcohol, p. 46 The Story of Industrial Alcohol, p. 19	
3. Characterized by OH group attached to C atom	The Story of Industrial Alcohol, p. 3	
a. ethyl  $\mathrm{H{-}\overset{H}{\underset{H}{C}}{-}\overset{H}{\underset{H}{C}}{-}OH}$		
b. methyl  $\mathrm{H{-}\overset{H}{\underset{H}{C}}{-}OH}$		
4. Chemically similar to water	Laboratory Experiment No. 1	Ditto La
a. Neither base nor acid b. Soluble in water		Cha che
5. Have toxic effect on living cells (body can tolerate ethyl ethyl or grain alcohol)	Laboratory Experiment No. 1	
6. Oxidizes easily		
B. Physical	Alcohol Education for Classroom and Community, p. 70	Alcohol and Comm
1. Clear water-like liquid		

	Teacher Materials	Student Materials
	Alcohol Education for Classroom and Community, p. 39	
toms f	*Teaching About Alcohol*, p. 46	
	The Story of Industrial Alcohol, p. 19	
roup	*The Story of Industrial Alcohol*, p. 3	
water acid	Laboratory Experiment No. 1	Ditto Lab. Exercise No. 1 Characteristics of alcohol, chemical and physical
living rate ethyl ol)	Laboratory Experiment No. 1	
	Alcohol Education for Classroom and Community, p. 70	*Alcohol Education for Classroom and Community*, p. 70
uid		

Audio Visual	Motivating Questions	Activit
Transparencies:	What are inorganic compounds?	
Series explaining the organic compounds and their position in the nature of things, #5 (a, b, w/overlays)	Our bodies are made up mostly of what group of compounds? Is alcohol an important compound in industry?	
Series of the classes or types of alcohol and their uses, #6 (a, b, c, d, e, f)		
Ethyl alcohol as a beverage, #7 (lift and 127 transparency)		
Chemical structures of alcohol illustrating the OH group, #8 (a, b, c)		
	What kind of alcohol is used in alcoholic beverages?	Labora Sl
	What are some of the effects of drinking other types of alcohol (methyl, isopropyl, denatured)?	
	Can alcohol be distinguished from water by it's color?	Have s alcoho
	How can you distinguish it from water?	Make b alcoho
Collect alcohol samples.	What happens when you put alcohol on a cut? Why? What is happening to the cells?	

	Motivating Questions	Activities
	What are inorganic compounds?	
g the organic eir position things, #5 s)	Our bodies are made up mostly of what group of compounds?	
	Is alcohol an important compound in industry?	
asses or types heir uses, #6 f)		
a beverage, transparency)		
res of alcohol OH group, #8		
	What kind of alcohol is used in alcoholic beverages?	Laboratory Exercise: Show effect on living cells
	What are some of the effects of drinking other types of alcohol (methyl, isopropyl, denatured)?	
	Can alcohol be distinguished from water by it's color?	Have students determine between alcohol and other liquids.
	How can you distinguish it from water?	Make bulletin board on different alcoholic beverages.
samples.	What happens when you put alcohol on a cut? Why? What is happening to the cells?	

ALCOHOL (continued)

Concepts	Teacher Materials	Student
2. Boils at 173° F (water, 212° F)	*Teaching About Alcohol*, p. 47	
3. Pure alcohol always has 5% water or some water-removing chemical.		
4. Mild pleasant odor (ethyl)	Laboratory Exercise No. 2	Laborat
5. Constant vapor pressure (relation between temperature and percent in solution and vapor given off)		
C. Biological Aspects		
1. Dehydrates tissue		
2. Toxic to tissue	A *Syllabus in Alcohol Education*, pp. 16-21	Laborat
3. Feels cool to the skin		
4. Highly permeable		
5. Depresses nerve impulses		
6. Effects of alcohol depends on:		
a. Type of alcohol		
b. Concentration		
c. Length of time in contact		
V. Manufacture of Alcohol		
A. Fermentation	*Alcohol Education for the Classroom and Community*, pp. 70-73	Laborat (fermen yeast)
1. Breakdown of sugar by yeast $C_6-H_2-O_6 \xrightarrow{yeast} 2C_2-H-OH_5+ CO_2$	Laboratory Exercise No. 5	

	Teacher Materials	Student Materials
er,	Teaching About Alcohol, p. 47	
as er-		
ethyl) ure	Laboratory Exercise No. 2	Laboratory Exercise No. 2
ercent apor		
kin	A Syllabus in Alcohol Education, pp. 16-21	Laboratory Exercise No. 3
lses epends		
in		
by	Alcohol Education for the Classroom and Community, pp. 70-73	Laboratory Exercise No. 5 (fermentation and observing yeast)
$_2$-H-OH$_5$+	Laboratory Exercise No. 5	

Audio Visual	Motivating Questions	Activities
	What would happen to a frog if strong alcohol was put on its skin?	Lab. Exercis Show:
	Would alcohol be good to disinfect a sunburn?	1. Oxi 2. De 3. Coc 4. Pe
	Is alcohol very good to put on any kind of wound?	
	What does alcohol do to the bacteria?	
	Why do they denature rubbing alcohol?	
Transparencies:	What do the chemicals that are used to denature alcohol do to the alcohol?	Discuss "ca alcohol, an
Overlay on denatured and methyl alcohol, illustrating the dangers of consuming these alcohols and the compounds used to denature alcohol, #9 w/overlays	Can alcohol kill? Under what conditions?	
Effect of methyl and isopropyl, #10 (a, b)	Where can we find yeast?	Ferment mol sugar sourc
	Is fermentation of sugar to alcohol legal?	Assign stud progress of

	Motivating Questions	Activities
	What would happen to a frog if strong alcohol was put on its skin?	Lab. Exercise: Show: 1. Oxidation 2. Dehydration 3. Coolness - evaporation 4. Permeability
	Would alcohol be good to disinfect a sunburn?	
	Is alcohol very good to put on any kind of wound?	
	What does alcohol do to the bacteria?	
	Why do they denature rubbing alcohol?	
and methyl	What do the chemicals that are used to denature alcohol do to the alcohol?	Discuss "canned heat," denatured alcohol, and why it is denatured.
g the dangers lcohols and o denature ys .	Can alcohol kill? Under what conditions?	
isopropyl,	Where can we find yeast?	Ferment molasses or other sugar source.
	Is fermentation of sugar to alcohol legal?	Assign students to record progress of fermentation.

ALCOHOL (continued)

Concepts	Teacher Materials	Student Mater
2. Raw Materials a. sugars from fruits such as beets, grapes, cane b. starch from grains, etc.		Alcohol Educa and Community
3. Products a. wine) b. beer) at 12-24% c. vinegar) alcohol/vol.		
4. Malting: Changing of starch to sugar by sprouting barley, then drying and heating.	Alcohol Education for Classroom and Community, p. 72	
B. Destructive Distillation		
1. Methyl a. Heating wood in the absence of air b. Reduction of carbon monoxide $CO+2H, \xrightarrow[\text{Pressure}]{\text{Zink chromite}} CH_3OH$ c. Variation in procedure produces other alcohols.	The Story of Industrial Alcohol, pp.8-16	
2. Ethyl a. Cracking of ethylene $C_2H_4+H_2O \xrightarrow{H_3PO_4} C_2H_5OH$		

	Teacher Materials	Student Materials
		Alcohol Education for Classroom and Community, pp. 70-73
its grapes, ins, etc.		
-24% ol/vol.		
	Alcohol Education for Classroom and Community, p. 72	
arch to ting rying		
on	The Story of Industrial Alcohol, pp.8-16	
n the arbon		
romite, $\rightarrow$ CH_3OH ure rocedure alcohols.		
hylene		
$\rightarrow$ C_2H_5OH		

Audio Visual	Motivating Questions	Activitie
	What is the name of the beverage produced from fruits? Molasses? Grain?	
	What must be done to starches before they can be fermented?	
	What is wood alcohol?	
Transparencies: Malting and Fermentation #11 (a, b)		Extra cre Shor tion pres
	Where is the plant in Breat Falls that does destructive distillation?	Have stud distillat process a importanc
	What are some of the products they produce?	
	The alcohol produced by destructive distillation is used for what purpose?	

	Motivating Questions	Activities
	What is the name of the beverage produced from fruits? Molasses? Grain? What must be done to starches before they can be fermented? What is wood alcohol?	
tation		Extra credit: Short reports on fermentation and malting could be presented to the class orally.
	Where is the plant in Breat Falls that does destructive distillation? What are some of the products they produce? The alcohol produced by destructive distillation is used for what purpose?	Have students research destructive distillation, then discuss the process and its economic importance.

Concepts	Teacher Materials	Student Mat
C. Distillation (Fractional)	Lab. Experiment No. 6	
1. Concentration of wines and beer	Demonstration	
a. to brandies		
b. to other distilled spirits		
2. Repeated distillation increases the amount of alcohol	Alcohol Education for Classroom and Community, pp. 73-75.	
D. Production of different whiskies	The Story of the Distilled Spirits Industry, p. 8	
1. Bourbon		
a. mash at least 51% corn		
b. distilled to 160 proof		
2. Rye	Teaching About Alcohol, p. 50	
mash at least 51% rye		
3. Bonded whisky		
a. mash of grain		
b. distilled to 100 proof		
c. aged 4 years		
d. federal inspection		
VI. Physiological Aspects of Alcohol		
A. Alcohol as a food		Ditto on ph
1. poorest kind		
2. provides many calories		

	Teacher Materials	Student Materials
al)	Lab. Experiment No. 6	
nes and	Demonstration	
lled spirits		
ion		
nt of	Alcohol Education for Classroom and Community, pp. 73-75	
t	The Story of the Distilled Spirits Industry, p. 8	
51% corn 60 proof		
	Teaching About Alcohol, p. 50	
51% rye		
00 proof		
tion		
lcohol		
		Ditto on physiology
ories		

Audio Visual	Motivating Questions	Act
Transparency: Fractional Distillation, #12	How does fractional distillation differ from destructive distillation?	Wor pe tr
	Why are distillaries inspected by the federal government?	Ma fo li
	How much alcohol, by volume, is there in a quart of 100 proof alcohol?	Pr ki
	How many different kinds of alcohol would you find in these beverages: beer, ale, rye whiskey, rum?	Ex
Film: "The Choice Is Yours"		
		Ha on be ef th

	Motivating Questions	Activities
tion, #12	How does fractional distillation differ from destructive distillation?	Work problems for determining percent from the proof of the alcohol.
	Why are distillaries inspected by the federal government?	Make a chart showing essentials for starting to make hard liquor.
	How much alcohol, by volume, is there in a quart of 100 proof alcohol?	Prepare bulletin board on kinds of package liquor.
	How many different kinds of alcohol would you find in these beverages: beer, ale, rye whiskey, rum?	Extra credit: Prepare reports on production of different whiskies.
s"		
		Have students do research on chemicals found in alcoholic beverages. Discuss their effects on the body and where they come from.

Concepts	Teacher Materials	Studen
3. provides no vitamins	Basic Information on Alcohol, p, 64	
4. needs no digestion		
5. oxidized only by liver		
B. Alcohol as a drug	Teaching About Alcohol, pp. 51-54	
1. Affects function of organs		
a. depresses function of the brain	Alcohol Education for Classroom and Community, p. 92	
b. depresses function of vital functions, except heart		
C. Alcohol as a food	Teaching About Alcohol, p. 51	
1. Processes of foods in the body:		
a. digestion		
b. absorption		
c. distribution		
d. oxidation		
e. elimination		
2. Processes of alcohol in the body:	Alcohol Education For Classroom and Community, p. 69	Ditto
a. digestion		
(1) none required		
(2) molecules already simple enough to be absorbed	Teaching About Alcohol, p. 55	
b. absorption in stomach and intestine	Alcohol Education for Classroom and Community, pp. 79, 80	

Teacher Materials	Student Materials
Basic Information on Alcohol, p, 64	
Teaching About Alcohol, pp. 51-54	
Alcohol Education for Classroom and Community, p. 92	
Teaching About Alcohol, p. 51	
Alcohol Education For Classroom and Community, p. 69	Ditto on Physiology
Teaching About Alcohol, p. 55	
Alcohol Education for Classroom and Community, pp. 79, 80	

Audio Visual	Motivating Questions	Activi
	Is there any kind of food value in alcohol? How about beer? How about whiskey?	
	What other food is like alcohol? (sugar)	
Transparencies:	Which would be worst for your body: 5 oz. of alcohol per day for one year, or 5 oz. of sugar per day for one year?	
The Brain (showing depression and illustrating memory loss because of excessive consumption of alcohol) #13 w/overlays	What is a drug?	
	What is food?	Resea
Processes of food through the body, #14	How are the intestines constructed to increase their ability to absorb?	
	What is digestion?	
	What other food requires little or no digestion?	
General processes, #15	Is the length of time very great for the distribution of alcohol throughout the body?	
Absorption of food, #16		

	Motivating Questions	Activities
	Is there any kind of food value in alcohol? How about beer? How about whiskey?	
	What other food is like alcohol? (sugar)	
ing depression memory loss	Which would be worst for your body: 5 oz. of alcohol per day for one year, or 5 oz. of sugar per day for one year?	
sive consumption w/overlays	What is a drug?	
	What is food?	Research the definitions for:
d through the	How are the intestines constructed to increase their ability to absorb?	a. digestion b. absorption c. distribution
	What is digestion?	d. oxidation e. elimination
	What other food requires little or no digestion?	
es, #15	Is the length of time very great for the distribution of alcohol throughout the body?	
ood, #16		

Concepts	Teacher Materials	Studen
c. distribution by circulatory system to all parts of the body	*Alcohol Education for Classroom and Community*, pp. 80, 81 - 87, 88 *Teaching About Alcohol*, p. 58	
d. oxidation (1) only in the liver (2) other food can be oxidized in all cells		
e. elimination (1) oxidation (2) breath (3) urine	*Alcohol Education for Classroom and Community*, p. 86	
D. Alcohol as a drug		
1. effect on the brain		
a. almost immediately it begins to deteriorate functions of the brain	A *Syllabus In Alcohol Education*, pp. 25, 26	
b. parts affected (in order) (1) cerebrum (2) cerebellum (3) mid-brain (4) medulla oblongata	*Basic Information on Alcohol*, pp. 95-106	
2. effects on other organs a. depression of most organs except the heart b. depression of organs caused by reaction on nervous system	*Alcohol Education for Classroom and Community*, pp. 90-92	Evalua

	Teacher Materials	Student Materials
n culatory to all parts body	Alcohol Education for Classroom and Community, pp. 80, 81 - 87, 88 Teaching About Alcohol, p. 58	
n the liver food can be ed in all		
ion	Alcohol Education for Classroom and Community, p. 86	
orain ediately to deter- ctions of cted	A Syllabus In Alcohol Education, pp. 25, 26	
rum ellum rain la oblongata	Basic Information on Alcohol, pp. 95-106	
er organs of most ept the heart of organs reaction on stem	Alcohol Education for Classroom and Community, pp. 90-92	Evaluation Sheet

Audio Visual	Motivating Questions	Ac
		Di th an th
Transparencies: Oxidation of alcohol by the liver, #17		Co ex ox
Effect of alcohol on the brain (related to certain areas and how amounts of alcohol affect the brain) #18 (a, b, w/overlays)	Is alcohol a stimulant or a depressant?	Ma qu
	Why do so many people think it is a stimulant?	Re in
	Why is it hard to quit drinking after the first drink?	Ha a o al
	Is alcohol a poison to the brain? (no - depressant	
	Will enough alcohol put the brain to sleep permanently?	
	Is there any proof that alcohol, as it is consumed in alcoholic beverages, does any harm to any of the body's organs?	Ha f ha
		De

	Motivating Questions	Activities
		Discuss difference between the use of food by the body and the use of alcohol by the body.
oy		Construct a bulletin board explaining the process of oxidation.
the rtain areas lcohol 3 (a, b,	Is alcohol a stimulant or a depressant? Why do so many people think it is a stimulant? Why is it hard to quit drinking after the first drink? Is alcohol a poison to the brain? (no - depressant Will enough alcohol put the brain to sleep permanently?	Make a list of ten or more questions on alcohol. Research and answer questions in class. Have the students construct a graphic explanation of functions of the brain and effects of alcohol on those functions.
	Is there any proof that alcohol, as it is consumed in alcoholic beverages, does any harm to any of the body's organs?	Have a discussion of the reasons for not using alcohol when you have been bitten by a snake. Define the word "depression."

Concepts	Teacher Materials	Student Materials
3. Factors that create variation in effects of alcohol a. length of time exposed b. amount of alcohol c. amount of alcohol per unit of time d. physical and mental health of individual		
E. Prolonged Use of Alcohol	Teaching About Alcohol, p. 51	

Audio Visual	Motivating Questions	Activi
Transparencies:		
Effects of alcohol on the brain, #18 (a, b, w/overlays)	Does eating butter or other greasy foods keep a person from becoming inebriated?	Discus progre increa alcoho
Cirrhosis of the liver, #19 w/overlay	Does alcohol cause cirrhosis of the liver?	Dramat physic to the of alc

	Motivating Questions	Activities
hol on the brain, erlays)	Does eating butter or other greasy foods keep a person from becoming inebriated?	Discuss the step by step progress in relation to increasing amount of alcohol in the body.
e liver, #19	Does alcohol cause cirrhosis of the liver?	Dramatize effects, social, physical, economic, related to the variation in factors of alcoholic consumption.

VII. TEACHER INFORMATION

Introductory Statement to Teachers

It is important that on the subject of alcohol, we present the facts with a reali
are important, but they must have meaning to the students. Let the students thin
decisions.

The scope of the study of alcohol is vast. In this unit we will cover only certa
to alcohol. The major areas of factual material that will be covered are the his
and the physiological effects of alcohol on the body.

Teaching materials and information are available in the kit so you, the teacher,
the information on certain topics. Study the unit and materials available in th
materials that best suit your student's needs. Each article of audiovisual mate
tional material has a story to tell or a question to ask. Anticipate the reactio
presenting the materials, and help them visualize all aspects of the topic prese

VII. TEACHER INFORMATION

ers

he subject of alcohol, we present the facts with a realistic outlook. Facts
ust have meaning to the students. Let the students think and make their own

alcohol is vast. In this unit we will cover only certain areas that pertain
eas of factual material that will be covered are the history, the manufacture,
ects of alcohol on the body.

formation are available in the kit so you, the teacher, can condense or expand
n topics. Study the unit and materials available in the kit and pick the
your student's needs. Each article of audiovisual material and other instruc-
ry to tell or a question to ask. Anticipate the reactions of the students, when
, and help them visualize all aspects of the topic presented by these materials.

TEACHER INFORMATION (continued)

OVERVIEW INTRODUCTION

ALCOHOL AND ITS NATURE

When the word "alcohol" is spoken, it means many things to many people, de
and environmental associations with alcohol. As educators, we can inform
alcohol, its social and economic effects, and just keep in mind that the w
ness, alcoholism, a burning sensation when placed on a cut. Just remember
there are students.

The word "alcohol" is said to come from an ancient Arabic term, "al-kohl,"
ground powder used to color the eyes. Later, the term included other fine
the sixteenth century, it also meant a volatile liquid. During this time
Paracelsus, used the term "alcoolvini" in his writings to designate the fl
we now call brandy.

The word "alcohol" is currently used in two senses. The first is a generi
of organic compounds having a hydroxy, OH group, attached to a carbon atom
which are attached to hydrogen of other carbon atoms. In the second usage
compound, hydroxy and C_2H_5OH, which is also called ethyl alcohol, grain al
ethyl alcohol is essentially the sole alcohol in an alcoholic beverage, th
as used in this unit, means ethyl alcohol.

Sometime in the past, long before man began to keep written records of his
he learned to ferment certain food into alcohol. Just when man began to m
can draw some conclusions from these facts: Fermentation of alcohol in la
in nature; before Homo sapiens, early man did not have the same mental ca
modern man. As man's culture developed, even though it was still very pri
tight containers, such as clay jars and goat skin bottles, farming practic
During this phase of man's cultural development, his storage practices fai
or honey, fermented, thus introducing man to large quantities of alcohol.

Alcoholic beverages were regarded with some awe by early man and are regar
present-day primitive tribes. Drinking was closely associated with sacred
worship, and religious rituals. Supernatural qualities were sometimes att

Wine and beer played an important part in primitive life, especially on gr
ceremonies for homage to the dead, the rites of initiating the young into

TEACHER INFORMATION (continued)

OVERVIEW INTRODUCTION

lcohol" is spoken, it means many things to many people, depending upon their experiences l associations with alcohol. As educators, we can inform persons of the properties of ial and economic effects, and just keep in mind that the word "alcohol" entails drunken- , a burning sensation when placed on a cut. Just remember, there are as many meanings as ts.

l" is said to come from an ancient Arabic term, "al-kohl," which meant, originally, a finely ed to color the eyes. Later, the term included other fine powders and in the first half of ntury, it also meant a volatile liquid. During this time the alchemist-physician, the term "alcoolvini" in his writings to designate the fluid distilled from wine which dy.

l" is currently used in two senses. The first is a generic term forming a large group unds having a hydroxy, OH group, attached to a carbon atom, the other three bonds of ed to hydrogen of other carbon atoms. In the second usage, "alcohol" means a specific y and C_2H_5OH, which is also called ethyl alcohol, grain alcohol, or ethanol. Since essentially the sole alcohol in an alcoholic beverage, the unmodified word, "alcohol," unit, means ethyl alcohol.

past, long before man began to keep written records of his beliefs and accomplishments, rment certain food into alcohol. Just when man began to make alcohol is not known, We nclusions from these facts: Fermentation of alcohol in large quantities does not occur re Homo sapiens, early man did not have the same mental capacity for association as does man's culture developed, even though it was still very primitive, he developed water- , such as clay jars and goat skin bottles, farming practices, and a need to store food. e of man's cultural development, his storage practices failed and his stored fruit, grain, nted, thus introducing man to large quantities of alcohol.

ges were regarded with some awe by early man and are regarded in much the same way by itive tribes. Drinking was closely associated with sacred feelings, magic, ancestor ligious rituals. Supernatural qualities were sometimes attributed to alcoholic beverages.

layed an important part in primitive life, especially on great occasions. Marriages, omage to the dead, the rites of initiating the young into adulthood, and important

decisions were generally accompanied by sessions of brewing and ceremonial drinking
in the village drank together, they had a sense of belonging and of good fellowship
out of hand, however, he would be tied up and kept under control until he was sober
The primitives felt that alcohol was important, but they also saw to it that drunke
the welfare of the group.

By the time man began to record his activities and form ancient civilizations, the
and the use of it, was very well established in their cultural patterns. Records o
zations refer to the use of alcoholic beverages. The origin of these "necessities"
ascribed to the gods. The Egyptains attributed to Osires the cultivation of the vi
of wine, as well as the manufacture of a type of beer from grain. To the Greeks an
of it was one of the beneficent acts of Bacchus.

Alcoholic beverages were produced from grains such as barley and wheat. The northe
the grape was not available, produced mead from the honey of wild bees. In other
plants such as the toddy palm were used. The Tarters used the sugar of milk and f
koumiss.

Distilled spirits are a relatively late development. The Arabian physician, Rhaze
the discovery of distillation in the tenth century. Inebriety existed long before
but distillation gave to wide circles a convenient and concentrated source of inebr
distilled liquors were used, not as beverages, but as medicine; only later when the
and cheaper did they begin to be used widely as beverages.

AMERICAN HISTORY

All through the history of mankind alcohol played an important part. In many cases
tant part in the very existence of cultures. Certainly, it was important in minor
influencing the condition of the fighting men. Records of the social effects on ea
vague and, at best, can just be speculated upon. In the Americas, espially North
account of the influences of alcohol, the controls on alcohol, and the attitudes o

When explorers and settlers left their homes in Europe for the New World, they bro
foods and beverages, including alcoholic beverages. The famed French explorer, Ja
was undoubtedly the first exchange of alcoholic beverages between the white man th
America, served wine to Chief Donnacinna and his braves during a banquet on the Is
St. Lawrence River. (North American Indians did not know about alcohol.)

TEACHER INFORMATION (continued)

ied by sessions of brewing and ceremonial drinking. When all persons
ey had a sense of belonging and of good fellowship. If someone got
tied up and kept under control until he was sober and ready to behave.
was important, but they also saw to it that drunkenness didn't threaten

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used widely as beverages.

ind alcohol played an important part. In many cases it played an impor-
of cultures. Certainly, it was important in minor battles and wars,
e fighting men. Records of the social effects on early cultures are
speculated upon. In the Americas, espially North America, we have a fair
cohol, the controls on alcohol, and the attitudes of the people.

t their homes in Europe for the New World, they brought along their familiar
alcoholic beverages. The famed French explorer, Jacques Cartier, in what
nge of alcoholic beverages between the white man the the Indian in North
onnacinna and his braves during a banquet on the Island of Orleans on the
rican Indians did not know about alcohol.)

TEACHER INFORMATION (continued)

In this early period, drinking was looked upon as the thing to do at any socia
good "belt" to give a man strength. Even the Puritans were not "puritanical"
the word. They enjoyed a glass of wine or other beverage as much as anyone el
drinking (drunkenness) that they considered immoral and punished. It meant lo
a bad example for young people, and was debasing to human dignity.

Moral suasion against intemperance was a frequent means of informal social con
In Massachusetts Bay Colony, the Puritan clergy spoke out vehemently against e
was an urging moderation in drinking by the Puritans; those guilty of excessiv
by whipping, fining, or by having to sit in the stocks.

During this period, the mid-1600's, many moral questions were beginning to be
problems developed during this period that have not been solved today. One of
tion of slaves, which by some persons is directly related to the brewing indus
England rum was traded for slaves and in turn, the slaves were traded for suga
used to produce more rum.

With the country in civil war and the opening of the west, the use of alcohol
it to release the pressures that were on them and many believed that drinking
strength to do what they had to do. Because of unhealthy effects of alcohol
Dr. Benjamin Rush, a signer of the Declaration of Independence, began to atta
moral grounds. And the women, who were kept in a position of social, economic
ity in early America, began a long crusade for temperance and women's rights.

PROHIBITION AND TEMPERANCE

As the problem of a growing nation fell upon the people, for a variety of rea
many turned their attention to alcohol. Some of the people used it to dilute
began to blame the use of alcohol as the root of all of their problems and th
the turmoil began; the first controls were imposed by the government in the f
those persons in the business of brewing alcohol. During this period, the ea
set up that reached its peak during the prohibition era. This pattern was in
the "wets" and the "drys." The "wets" were the producers and sellers of alco
groups of persons looking for a solution for problems incurred because of exc
looking for political and social recognition. The stronger of these groups,
were the Women's Christian Temperance Union and the Anti-Saloon League.

National prohibition was led by prohibition in several states from 1850 to 19
had their prohibition laws repealed before national prohibition was introduce

TEACHER INFORMATION (continued)

drinking was looked upon as the thing to do at any social function or as just a
man strength. Even the Puritans were not "puritanical" in the way we often use
ed a glass of wine or other beverage as much as anyone else. It was excessive
) that they considered immoral and punished. It meant loss of working time, set
ng people, and was debasing to human dignity.

intemperance was a frequent means of informal social control in colonial America.
Colony, the Puritan clergy spoke out vehemently against excessive drinking. There
tion in drinking by the Puritans; those guilty of excessive drinking were punished
or by having to sit in the stocks.

the mid-1600's, many moral questions were beginning to be asked. Moral and civil
uring this period that have not been solved today. One of these is the introduc-
h by some persons is directly related to the brewing industry of this period. New
ed for slaves and in turn, the slaves were traded for sugar and molasses which was
rum.

civil war and the opening of the west, the use of alcohol increased. People used
ressures that were on them and many believed that drinking was healthy and gave the
they had to do. Because of unhealthy effects of alcohol on the society, men like
signer of the Declaration of Independence, began to attack drinking on medical and
the women, who were kept in a position of social, economic, and political inferior-
, began a long crusade for temperance and women's rights.

E

growing nation fell upon the people, for a variety of reasons, real and imaginary,
ttention to alcohol. Some of the people used it to dilute their problems, others
use of alcohol as the root of all of their problems and the nation's problems. So
the first controls were imposed by the government in the form of taxes on farmers and
business of brewing alcohol. During this period, the early 1800's, a pattern was
its peak during the prohibition era. This pattern was influenced by two factions,
"drys." The "wets" were the producers and sellers of alcohol and the "drys" were the
ooking for a solution for problems incurred because of excessive drinking, and groups
al and social recognition. The stronger of these groups, and led the prohibitionists,
istian Temperance Union and the Anti-Saloon League.

n was led by prohibition in several states from 1850 to 1900. Some of these states
on laws repealed before national prohibition was introduced. Maine, Massachusetts,

Rhode Island, Kansas, Iowa, and the Dakotas were some of these early prohibi prohibition there were twenty-four states with some kind of laws that were was included in this list.

The National Prohibition Act was passed in 1919 and included in the national Amendment. It included definitions of intoxicating beverages, enforcement, the distribution of liquor.

Even with the passing of the Jones Act in 1929, which provided that persons import, export, selling or transporting liquor, could be sent to prison for prohibition was followed at once by widespread violation of the federal laws to great proportions. The phrase, "home brew," became very common. Many de drinking of denatured alcohol. Flavoring extract, bay rum, and medicinal p for beverage purposes, regardless of the after effects. Liquor raids and s were daily occurrences. Liquor was fraudently withdrawn from bond and sold Smuggling across the international borders and along the coast lines went o

Due to the vast violation of the Prohibition Act and the loss of revenues, Amendment was passed in 1933, which repealed the 18th Amendment. Controls then, have been educational such as promotion of self-restraint, medical an problems are involved, and laws restricting alcohol consumption during cert age requirements, etc.

NATURE OF ALCOHOL - CHEMICAL, PHYSICAL

All of the alcohols are composed of carbon, hydrogen, and oxygen atoms. Becau atoms, alcohol is considered to be closely related to water and compounds su has the same chemical formula as ether, C_2H_5O. The difference is in the way This relationship makes these compounds isomers. There are a large number alcohol, many of these having different chemical names depending on the syst are also several common names, or trade names, given to the more common alc are a few examples of the many alcohols.

Three structural features are of importance when considering the chemistry tional group are two bonds, the carbon-oxygen and the oxygen-hydrogen bonds atom has two pairs of unshared electrons which may be employed to form furt same structure features, except for the carbon-oxygen bond, the resemblance will be considerable. Like water, alcohol is neutral. That is, it is neit

TEACHER INFORMATION (continued)

the Dakotas were some of these early prohibition states. Before national
our states with some kind of laws that were prohibition orientated, Montana

s passed in 1919 and included in the national law as the Eighteenth
ions of intoxicating beverages, enforcement, and strict regulations of

ones Act in 1929, which provided that persons convicted of manufacture,
nsporting liquor, could be sent to prison for five years and fined $10,000,
ce by widespread violation of the federal laws. Illicit distilling increased
ase, "home brew," became very common. Many deaths were reported from the
Flavoring extract, bay rum, and medicinal preparations were widely used
ess of the after effects. Liquor raids and seizures by enforcement agents
r was fraudently withdrawn from bond and sold at ever mounting prices.
onal borders and along the coast lines went on for a time almost unmolested.

he Prohibition Act and the loss of revenues, and a popular unrest, the 21st
which repealed the 18th Amendment. Controls for legal consumption, since
ch as promotion of self-restraint, medical and social assistance where
s restricting alcohol consumption during certain activities as driving,

AL

ed of carbon, hydrogen, and oxygen atoms. Because of the arrangement of these
o be closely related to water and compounds such as ether. Ethyl alcohol
as ether, C_2H_5O. The difference is in the way the atoms are bonded together.
compounds isomers. There are a large number of compounds that are called
different chemical names depending on the system of naming used. There
or trade names, given to the more common alcohols. Ethyl, methyl, isopropyl,
alcohols.

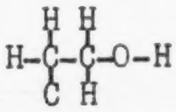
of importance when considering the chemistry of the alcohols. In the func-
e carbon-oxygen and the oxygen-hydrogen bonds. Besides these bonds, the oxygen
electrons which may be employed to form further bonds. Since water has the
t for the carbon-oxygen bond, the resemblance between water and the alcohols
ter, alcohol is neutral. That is, it is neither an acid nor a base. It

should be kept in mind that under certain conditions both alcohols and water wi to be either acids or bases.

Since we are concerned only with grain alcohol or ethyl alcohol, we will look o this alcohol and methyl alcohol.

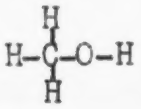
ETHYL

R-OH or



$H-\overset{H}{\underset{C}{C}}-\overset{H}{\underset{H}{C}}-O-H$

METHYL



$H-\overset{H}{\underset{H}{C}}-O-H$

W

H

Some of the other characteristics that are probably of more significance to us grouped under the heading as being physical characteristics. Since there are m restrict our topic to ethyl alcohol.

Water free alcohol boils at 173° F. It is a clear, thin liquid that vaporizes soluble in water. Biologically it has, due to its nature, some important chara effect, dehydrates tissue, is toxic to tissue, and passes readily through semi-

MANUFACTURE OF ALCOHOL

Although much industrial alcohol is now manufactured synthetically from certai the alcohol in all alcoholic beverages is made by fermentation of sugar, or wi tation reaction proceeds through a series of steps, but the overall reaction m very simple chemical equation:

$$C_6H_{12}O_6 \xrightarrow{yeast} 2\ C_2H_5OH + 2\ CO_2$$

Glucose ethyl alcohol carbon dioxide

Theoretically, 180 g. of glucose should yield 92 g. of ethyl alcohol and 88 g. o practice, the yield of alcohol is slightly below this figure because the yeast glucose and form traces of other products besides alcohol.

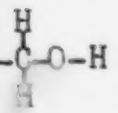
TEACHER INFORMATION (continued)

under certain conditions both alcohols and water will show slight tendencies
s.

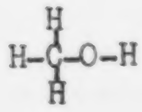
with grain alcohol or ethyl alcohol, we will look only at the structure of
cohol.

METHYL

WATER



$-\overset{H}{\underset{H}{C}}-O-H$



$H-\overset{H}{\underset{H}{C}}-O-H$

H-O-H

eristics that are probably of more significance to us at this time will be
as being physical characteristics. Since there are many alcohols, we will
yl alcohol.

at 173° F. It is a clear, thin liquid that vaporizes very readily and is very
ically it has, due to its nature, some important characteristics; has a cooling
, is toxic to tissue, and passes readily through semi-permeable membranes.

alcohol is now manufactured synthetically from certain petroleum products,
lic beverages is made by fermentation of sugar, or with yeast. This fermen-
through a series of steps, but the overall reaction may be expressed by a
tion:

$$C_6H_{12}O_6 \xrightarrow{yeast} 2\ C_2H_5OH + 2\ CO_2$$

Glucose ethyl alcohol carbon dioxide

lucose should yield 92 g. of ethyl alcohol and 88 g. of carbon dioxide. In
cohol is slightly below this figure because the yeast cells consume a little
f other products besides alcohol.

One of the earliest chemical reactions known to man was the fermentation of s
That process is today the most important method for the industrial preparatio
material for the fermentation may be a sugar (sucrose or cane sugar), or it
from a cereal grain such as oats, wheat, rye, or corn, or from potatoes and r
primary raw material, it is initially treated so as to break it down to form
fermentation is carried out with yeast, an enzyme, zymase, being the active
is treated with barley sprouts, which contain malt to break it down to glucos
acted on by zymase, must first be hydrolyzed. The enzyme which accomplishes
secreted by yeast.

The action of the yeast ceases when the ethanol content reaches about 14% bec
cannot live in the medium. Consequently, to prepare alcohol of reasonable pu
separate it from the excess of water present. Fractional distillation is use
containing as little as 4.4% water. This roughly 95% ethanol is termed grai
of water cannot be removed by fractional distillation because ethanol and wa
mixture that has a lower boiling point than pure ethanol. Industrially, 100
95% alcohol by adding benzine and distilling fractionally. In the laborator
calcium oxide, is added to react with the water and remove it chemically.

Starch and Water $\xrightarrow{\text{Malt}}$ Maltose $\xrightarrow[\text{Water}]{\text{Maltose}}$ Glucose

Sucrose and Water $\xrightarrow{\text{Invertose}}$ Glucose and Fructose

Glucose and Water $\xrightarrow{\text{Zynose}}$ Ethanol or CO_2

The simplest of the alcohols is commonly called wood alcohol because for man
was the destructive distillation of wood. When heated in the absence of air
an evil-smelling liquor known as pyroligneous acid. More recently, methanol
by reduction of carbon monoxide. A special catalyst containing zinc chromit
must be carried out at elevated temperatures and high pressure. By modifyin
many of the other alcohols of more complex structure can be obtained.

$CO + 2 H_2$ Zinc $\underline{\text{Chromite}}$ $OH_3 OH$

TEACHER INFORMATION (continued)

reactions known to man was the fermentation of sugars to form ethyl alcohol.
t important method for the industrial preparation of ethanol. The raw
n may be a sugar (sucrose or cane sugar), or it may be starch obtained
ats, wheat, rye, or corn, or from potatoes and rice. If starch is the
nitially treated so as to break it down to form a sugar mixture. The
ith yeast, an enzyme, zymase, being the active ferment for glucose. Starch
s, which contain malt to break it down to glucose, and sucrose, which is not
t be hydrolyzed. The enzyme which accomplishes this step is invertase, also

s when the ethanol content reaches about 14% because the micro-organism
Consequently, to prepare alcohol of reasonable purity, it is necessary to
of water present. Fractional distillation is used to obtain ethyl alcohol
water. This roughly 95% ethanol is termed grain alcohol. The last traces
y fractional distillation because ethanol and water form a constant-boiling
ling point than pure ethanol. Industrially, 100% ethanol is prepared from
e and distilling fractionally. In the laboratory a drying agent, such as
eact with the water and remove it chemically.

$\xrightarrow{\text{Malt}}$ Maltose $\xrightarrow[\text{Water}]{\text{Maltose}}$ Glucose

$\xrightarrow{\text{Invertose}}$ Glucose and Fructose

$\xrightarrow{\text{Zynose}}$ Ethanol or CO_2

s is commonly called wood alcohol because for many years the source of methanol
ation of wood. When heated in the absence of air, wood forms charcoal and
wn as pyroligneous acid. More recently, methanol has been prepared commercially
xide. A special catalyst containing zinc chromite is used and the reaction
ated temperatures and high pressure. By modifying conditions in the process,
of more complex structure can be obtained.

$\xrightarrow{\text{romite}}$ OH_3 OH

A process of making certain alcoholic beverages that we should ponder
is a procedure for the separation of substances that have different bo
173° F, while water does not boil until it reaches 212° F. When the f
point above 173° F, the alcohol and some of the water rises off in a v
conducted through a cooling condenser called a "still."

Because we are mostly concerned with alcoholic beverages, let's take a
of certain beverages. Wine material is fresh juice of grapes, which i
crushing or treading by human feet. In red wines, the skin is used.
that are necessary for the fermentation. Fermentation is allowed to p
at a temperature of around 80° F. The change from sugar to alcohol ev
sometimes necessary. At the end of the fermentation period, the fluid
or tanks for periods ranging from a few months to several years. Duri
settles out and there is an imporvement in the flavor. The concentrat
10% to 14%, by volume. If sugar is added to sweeten the wine, the alc
prevent further fermentation.

Beer: Malt is formed by sprouting barley grains and then cooking the
process leaves amylase which changes the starches into sugars so the y
Whiskey: Like beer, whiskey is made from vegetable starches which mus
formed after fermentation, is called "distiller's beer" and this is di
60%, by volume of weight. The raw whiskey is then diluted with water
is then aged by being stored for from two to eight years in a white oa
been charred with a flame. During the aging process, the whiskey diss
charred wood, part of which imparts an amber color to the whiskey. So
and higher alcohols from the raw whiskey combine to form esters. This
Brandy: Brandy is made by distilling wine in a still similar to that
starting material for rum is molasses. Gin: This is made by mixing n
berries, orange peel, etc., are added to the mixture for flavoring and
merely strained. Vodka: Vodka is only water plus neutral spirits.

PHYSIOLOGICAL ASPECTS OF ALCOHOL ON THE BODY

Before we begin, we might ask the following questions: What is alcoho
is it a food? Actually it is both. It is a drug in the sense that it
supplying vitamins or nourishment to them. It is the poorest of foods
no vitamins, proteins, or fats.

TEACHER INFORMATION (continued)

alcoholic beverages that we should ponder on is distillation. Distilling
aration of substances that have different boiling points. Alcohol boils at
ot boil until it reaches 212° F. When the fermented liquid is heated to a
cohol and some of the water rises off in a vapor above the heated vat and are
condenser called a "still."

erned with alcoholic beverages, let's take a closer look at the production
e material is fresh juice of grapes, which is removed from the skin by
man feet. In red wines, the skin is used. The skin has on it the yeasts
fermentation. Fermentation is allowed to proceed for from four to ten days
80° F. The change from sugar to alcohol evolves heat so that cooling is
he end of the fermentation period, the fluid is separated and stored in casks
ng from a few months to several years. During storage, some solid material
n imporvement in the flavor. The concentration of alcohol in wine ranges from
sugar is added to sweeten the wine, the alcohol content has to be over 15% to
on.

prouting barley grains and then cooking the sprouts to kill them. This
ch changes the starches into sugars so the yeasts can change them into alcohol.
ey is made from vegetable starches which must first be malted. The fluid,
is called "distiller's beer" and this is distilled to a concentration of about
The raw whiskey is then diluted with water to about 52% alcohol, by volume, and
ed for from two to eight years in a white oak barrel, the interior of which has
During the aging process, the whiskey dissolves certain substances from the
h imparts an amber color to the whiskey. Some of the traces of organic acids
he raw whiskey combine to form esters. This improves the flavor of the whiskey.
distilling wine in a still similar to that used for whiskey. Rum: The
is molasses. Gin: This is made by mixing neutral spirits and water. Juniper
, are added to the mixture for flavoring and the fluid is either distilled or
Vodka is only water plus neutral spirits.

ON THE BODY

ask the following questions: What is alcohol to the body? Is it a drug or
is both. It is a drug in the sense that it affects many organs without
rishment to them. It is the poorest of foods, supplying many calories but
fats.

First, let us take a look at alcohol as a food. When foods are taken into th
must take place; digestion, absorption, distribution, oxidation, elimination.
not necessary since its molecular form is already simple enough to be directl
stream. 2. Absorption, which takes place in the stomach or small intestine,
blood stream at a highly variable rate. 3. Distribution, the way in which al
to each organ, tissue, and cell. Alcohol leaves the blood stream and enters t
4. Oxidation, in which the liver, at a fixed speed, remodels the chemical str
leases heat and energy. The heat and energy, or calories, resulting from the
used by the body cells instead of calories released from any other food. Whe
metabolized in any cell of the body, alcohol is metabolized chiefly in the ce
ination, during which a small quantity, 2% to 10%, of the alcohol excapes unu

Alcohol, though a very inadequate food, is a rich source of fuel. Less than
leaves the body through the breath and urine. The other 90% is absorbed into
and small intestine, is transported to the liver, and then circulates through

The liver is the only organ able to initiate the process by which the body di
works steadily as long as any alcohol is present, but even the healthiest liv
two or three drops of it at one time. Excessive alcohol cannot be stored and
the blood while it waits its turn in the liver's chemical laboratory.

Each individual disposes of alcohol at a unique and constant rate. The avera
alcohol in one ordinary highball in about an hour. Nothing is known which wi
oxidation, but much is known about factors which may slow down the absorption
patible with the oxidation capacity of the liver. If absorption is delayed u
of alcohol, even its mildest effects will not be apparent.

To a great extent, a knowledgeable drinker can prevent, or minimize, the seda
of alcohol. If he limits his drinking to one or two well-diluted drinks, sip
of time, and eats while, or before, drinking, he is unlikely to become even m
under these conditions the alcohol can be disposed of as fast as it is absorb

Having completed taking a quick look at the effect of alcohol as the body use
see how it affects the body as a drug. The pharmacological effects of alcoho
relation to various areas and functions of the body. Most of these effects a
alcohol in the brain. If there were some magical way of preventing absorbed
brain, the drinker would never become intoxicated, but this, of course, is im

TEACHER INFORMATION (continued)

l as a food. When foods are taken into the body, certain processes
ion, distribution, oxidation, elimination. Digestion of alcohol is
orm is already simple enough to be directly absorbed into the blood
s place in the stomach or small intestine, where alcohol enters the
ate. 3. Distribution, the way in which alcohol travels in the blood
lcohol leaves the blood stream and enters the cells by simple diffusion.
at a fixed speed, remodels the chemical structure of alcohol and re-
nd energy, or calories, resulting from the oxidation of alcohol are
alories released from any other food. Whereas most foods may be
, alcohol is metabolized chiefly in the cells of the liver. 5. Elim-
ity, 2% to 10%, of the alcohol excapes unused via the breath or urine.

ood, is a rich source of fuel. Less than 10% of the alcohol consumed
and urine. The other 90% is absorbed into the blood from the stomach
l to the liver, and then circulates throughout the body.

initiate the process by which the body disposes of alcohol. The liver
hol is present, but even the healthiest liver cannot cope with more than
me. Excessive alcohol cannot be stored and so continues to travel in
in the liver's chemical laboratory.

l at a unique and constant rate. The average person can oxidize the
n about an hour. Nothing is known which will significantly hasten
factors which may slow down the absorption of alcohol to a rate com-
y of the liver. If absorption is delayed until the liver can dispose
ts will not be apparent.

drinker can prevent, or minimize, the sedative and anesthetic effects
king to one or two well-diluted drinks, sips them slowly over a period
, drinking, he is unlikely to become even mildly intoxicated, because
can be disposed of as fast as it is absorbed.

ok at the effect of alcohol as the body uses it as a food, let's now
drug. The pharmacological effects of alcohol will be discussed in
tions of the body. Most of these effects are due to the presence of
ere some magical way of preventing absorbed alcohol from reaching the
come intoxicated, but this, of course, is impossible. It is important

to remember that there are several factors that are important determinants
the body; the length of time the body has been exposed to alcohol, be it m
the amount of alcohol the body is exposed to over a given time; the genera
of the individual; the rate at which the alcohol is absorbed, due to type
and when it was eaten; in what form the alcohol was consumed.

With occasional drinking there is little effect, as far as deterioration i
in the body. Small amounts of alcohol, however, begin almost immediate de
of the brain. Different parts of the brain begin to malfunction in a pre
content increases.

The brain is composed of three levels: The cerebrum, comprising more tha
brain, the cerebellum, the little brain and the mid-brain, and the medull

The cerebrum is the seat of such functions as judgment, caution, self-con
attention, intelligence. The cerebellum controls muscular coordination.
connect the cerebrum with the spinal cord and control all involuntary act
to the correct area in the brain.

TEACHER INFORMATION (continued)

several factors that are important determinants in considering any effects on
the body has been exposed to alcohol, be it minutes, days, hours, or years;
ody is exposed to over a given time; the general physical and mental health
at which the alcohol is absorbed, due to type and quantity of food eaten,
at form the alcohol was consumed.

ere is little effect, as far as deterioration is concerned, on the organs
of alcohol, however, begin almost immediate deterioration of the functions
rts of the brain begin to malfunction in a precise pattern as the alcohol

ree levels: The cerebrum, comprising more than three-fourths of the entire
little brain and the mid-brain, and the medulla, or the lower brain.

such functions as judgment, caution, self-control, reason, will power,
he cerebellum controls muscular coordination. The medulla and mid-brain
he spinal cord and control all involuntary actions and put the right message
brain.

TESTS AND EVALUATION

Tests, quizzes, and examination are a means of judging progress. Because evaluat
rather than just a terminal process, tests may be used at the beginning of a unit
establish a base for instruction. They may be used during the unit to assess wha
and at the conclusion of the unit to appraise the outcome of instruction. They m
months, or years later to check the durability of learning.

Self-tests, pre-tests, or diagnostic tests are designed to establish a base for i
ance - a means of determining course content and a way of identifying the needs a
They are never graded, although one means of checking new learning is to keep a r
to compare with the score on the same questions after the unit is completed. An
istered self-test follows:

SELF-TEST: OPINIONS ON THE USE AND CONTROL OF BEVERAGE

The following statements are concerned with the use and effects of alcohol as a b
statements deal with facts and some reflect opinions. You are asked to consider
and indicate your choice in the proper column. If you are in agreement with what
place an "X" opposite the statement in the column headed "agree." If you disagre
place an "X" in the column headed "disagree." If you do not know whether you agr
statement, or if you are doubtful, place an "X" in the column marked "uncertain."

Agree

1. Even among the experts, very little is known of the effects of alcohol upon the human body.
2. Frequent drunkenness and alcoholism means the same thing.
3. Drinking alcoholic beverages, though beverages, though begun in moderation, will lead eventually to alcoholism.
4. The present trend in the consumption of alcoholic beverages in the United States indicates a decrease in per capita consumption.

TEACHER INFORMATION (continued)

TESTS AND EVALUATION

ans of judging progress. Because evaluation should be a continuous,
ts may be used at the beginning of a unit to motivate and to
may be used during the unit to assess what is being accomplished
praise the outcome of instruction. They may even be used several
bility of learning.

ts are designed to establish a base for individual and group guid-
tent and a way of identifying the needs and interests of students.
s of checking new learning is to keep a record of the pre-test score
uestions after the unit is completed. An example of a simply admin-

IIONS ON THE USE AND CONTROL OF BEVERAGE ALCOHOL

with the use and effects of alcohol as a beverage. Some of the
lect opinions. You are asked to consider each of the statements
column. If you are in agreement with what the statement says,
the column headed "agree." If you disagree with the statement,
gree." If you do not know whether you agree or disagree with the
e an "X" in the column marked "uncertain."

	Agree	Disagree	Uncertain
e is known of the effects			
m means the same thing.			
gh beverages, though begun y to alcoholism.			
on of alcoholic beverages decrease in per capita			

Agree

5. The increase in alcohol is the fundamental cause of most alcoholism.

6. Most people who drink alcoholic beverages do so moderately.

7. Alcohol is directly responsible for a large proportion of the crimes committed.

8. Alcoholic beverages are a form of poison.

9. Alcohol, in the form of a beverage, is a good stimulant and, therefore, effective in the treatment of snakebite, shock, or a common cold.

10. There are several kinds of alcohol, but ethyl alcohol is the one contained in alcoholic beverages.

11. The alcohol content of alcoholic beverages produced by fermentation is greater than that of beverages produced by distillation.

12. The chemical effect of alcohol on the body is similar to that of ether and acts as an anaesthetic or depressant on the nervous system.

13. Alcohol beverages are a form of food.

14. The same amount of alcohol taken in the form of whiskey is more "potent" than that taken in the form of wine.

15. Alcohol may, when taken in small amounts, serve a beneficial purpose in bringing about relaxation, lessening body tension, and acting as a "social lubricant."

16. People who drink alcoholic beverages do not make good parents.

17. Excessive drinking produces serious physical and mental diseases.

TEACHER INFORMATION (continued)

	Agree	Disagree	Uncertain
nol is the fundamental cause of most alcoholism.			
k alcoholic beverages do so moderately.			
responsible for a large proportion of the			
are a form of poison.			
of a beverage, is a good stimulant and, in the treatment of snakebite, shock, or a			
inds of alcohol, but ethyl alcohol is the one ic beverages.			
of alcoholic beverages produced by fermenta- that of beverages produced by distillation.			
of alcohol on the body is similar to that of anaesthetic or depressant on the nervous			
re a form of food.			
alcohol taken in the form of whiskey is more taken in the form of wine.			
aken in small amounts, serve a beneficial about relaxation, lessening body tension, cial lubricant."			
coholic beverages do not make good parents.			
produces serious physical and mental diseases.			

TEACHER INFORMATION (continued)

Agr

18. Alcohol in high concentration is known to be irritating to body tissues; therefore, when whiskey, containing 50% alcohol by volume is taken into the body, it irritates and causes inflammation of the organs of the body, especially the brain.

19. Alcohol taken into the body in beverage form is absorbed from the stomach and taken directly into the bloodstream without change.

20. Most people can drink alcoholic beverages without injury to their health.

21. The habit of excessive drinking puts a great strain upon the heart and is thus responsible for much heart disease.

22. Prohibition of the manufacture, sale, and use of alcoholic beverages prevents people from drinking and thereby solves the problems of excessive drinking and alcoholism.

23. The best known method for measuring the amount of alcohol in the brain is to measure the concentration of alcohol in the blood.

24. Magazines and newspapers containing liquor advertisements should not be patronized.

25. Scenes which show persons drinking alcoholic beverages, with or without ill effects, should not be permitted in the movies.

26. The use of alcoholic beverages has existed for thousands of years in all countries despite all legal and social attempts to prohibit it.

27. Many persons can increase their skill in operating an Automobile after taking a little alcohol.

28. Chronic alcoholics are more susceptible to respiratory diseases, especially pneumonia, and are less able to survive them than non-alcoholics.

TEACHER INFORMATION (continued)

	Agree	Disagree	Uncertain
is known to be irritating to body key, containing 50% alcohol by volume ritates and causes inflammation of ially the brain.			
n beverage form is absorbed from the to the bloodstream without change.			
ic beverages without injury to their			
ng puts a great strain upon the heart uch heart disease.			
e, sale, and use of alcoholic beverages and thereby solves the problems of .			
suring the amount of alcohol in the ntration of alcohol in the blood.			
aining liquor advertisements			
inking alcoholic beverages, with d not be permitted in the movies.			
es has existed for thousands of years legal and social attempts to prohibit it.			
eir skill in operating an Automobile after			
susceptible to respiratory diseases, e less able to survive them than			

Agre

29. Any use of alcoholic beverages by the state encourages drinking by giving it official approval.

30. The use of alcoholic beverages in the home is not necessarily harmful to good family life.

31. Various attitudes toward serving and drinking alcoholic beverages are found among different groups in our society.

32. Judgment, vision, and reaction time in individual performance are frequently impaired by even small amounts of alcohol.

33. The money obtained from taxes on alcoholic beverages should not be used for the support of schools or for the aged.

TEACHER INFORMATION (continued)

	Agree	Disagree	Uncertain
beverages by the state encourages drinking approval.			
beverages in the home is not necessarily y life.			
ard serving and drinking alcoholic beverages rent groups in our society.			
reaction time in individual performance are y even small amounts of alcohol.			
om taxes on alcoholic beverages should not be of schools or for the aged.			

VIII. TEACHER AND STUDENT INFORMATION

SCRIPT: SLIDE SERIES HISTORY

PREHISTORIC MAN

When man first encountered alcohol is not known. It is possible to suppose that the
form of mead (fermented honey) was known to Paleolithic or Stone Age **Man**, for there i
his descendants made wine and beer.

We can best date the discovery of alcoholic beverages by stating that Man needed thes
to produce alcoholic beverages:

1. Water-tight containers
    a. of clay
    b. of skins
2. Storage practices
3. Recognition and reproduction of process

It should be remembered that Man did not discover alcohol; small plant-like organism
making alcohol for millions of years before Man was on the earth. Man simply helped
larger quantities.

EGYPT

In the early Egyptian culture, women were encouraged to become drunk to the point whe
were vomiting up their food and drink. This provided intertainment for most of the
drank until they were inebriated.

The records show that the drinking of alcoholic beverages in ancient Egypt was common
were wine and beer. The slide is a copy of some of the records left by the ancient
suggest a wild party that we have mentioned above and it is unlikely that it is. Lik
Egyptians used wine for many occasions, religious ceremonies, marriages, and just for
of the flavor.

SPARTA

Of all the Greek states, the Spartans had no drinking parties. Those Spartans who be

II. TEACHER AND STUDENT INFORMATION

SCRIPT: SLIDE SERIES HISTORY

not known. It is possible to suppose that the beverage alcohol in the
own to Paleolithic or Stone Age **Man**, for there is abundant proof that

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not discover alcohol; small plant-like organisms called yeast had been
before Man was on the earth. Man simply helped the yeast to make it in

were encouraged to become drunk to the point where they could not walk and
k. This provided intertainment for most of the social affairs. Men also

f alcoholic beverages in ancient Egypt was common. The beverages they drank
copy of some of the records left by the ancient Egyptians. It does not
ntioned above and it is unlikely that it is. Like most other cultures, the
ns, religious ceremonies, marriages, and just for relaxation and enjoyment

s had no drinking parties. Those Spartans who became inebriated were usually given a beating. Spartan soldiers were not allowed drink while on duty, bu critical, they were allowed a limited amount of alcoholic beverage.

Plato, a Greek scholar, recommended that wine be prohibited to children under eighte magistrates in office, to pilots (government officials), and to judges.

The Spartan soldiers were one of history's greatest armies of soldiers. When we thin discipline, we often refer to the Spartans.

ROME

Early Rome is to be placed among the nations of simple living. In early times heav under social ban. In fact, the cultivation of the vine came in a comparatively lat in drinking bouts, he was called "crassator" (thick-headed). Children, young men un and servants were forbidden to drink at all. Authorities give few instances of hea days.

According to the authorities, wine drinking in the later Republic shows a marked cha and for the worst. Rome began to forget their ancient discipline. In the first Pun laid the blame for a military reverse upon his soldiers for being drunk. In the Jug roamed over the country side and sold their loot for wine. In the same war some Rom off their guard at a feast and massacred.

Wine drinking became extremely fashionable. Gladiatorial combats were being staged glutted with food and drink, were applauding the contestants when they got their thr

Beginning with early Rome, one notes there was a stringent prohibition of women's dr says that women were not to touch wine at all. Athenaeus says that no freeborn woma to drink wine. The law provided the death penalty for women who drank. In later Ro living Romans had been inoculated with the sophistication of older societies, Roman their brothers to drink.

ARABIA

The word "alcohol" is derived from the Arabic word "al kohl," originally designating antomony used for staining the eyes. When we call liquor "eyewash" we little reali expression relates to the origin of the word.

TEACHER AND STUDENT INFORMATION (continued)

Spartan soldiers were not allowed drink while on duty, but if the duty was not
wed a limited amount of alcoholic beverage.

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ct, the cultivation of the vine came in a comparatively late date. If anyone engaged
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side and sold their loot for wine. In the same war some Roman officers were caught
ast and massacred.

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rink, were applauding the contestants when they got their throats cut.

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t to touch wine at all. Athenaeus says that no freeborn woman in Rome was allowed
provided the death penalty for women who drank. In later Rome, when the plain-
inoculated with the sophistication of older societies, Roman women were as free as
.

erived from the Arabic word "al kohl," originally designating a fine powder of
ing the eyes. When we call liquor "eyewash" we little realize how closely this
he origin of the word.

The Arabian physician, Rhases, is credited with the discovery of distillation in t
The first distilled liquors were used not as beverages but as medicine. Only late
and cheaper, did they begin to be used widely as beverages.

CHINA

China had one of the earliest prohibition laws. In China during the Chou Dynasty
the reign of the fourth emperor of the Yuan Dynasty, laws against the manufacture,
wine were established and repealed no less than forty-one times. Penalties for vi
extremely severe.

INDIA

Because the people of India made a fermented drink called "tari" from the sap of a
ment, at one time, ordered the trees to be cut down in an effort to reduce drunken

SPAIN

The people of Spain have shown great restraint in the use of alcohol. Although th
the spread of distilled beverages in South America, they seem to control themselve
to drinking alcoholic beverages.

EARLY AMERICAN COLONIES

When explorers and settlers left their homes in Europe for the New World, they bro
foods and beverages, including alcoholic beverages. Alcohol was present even in t
such as Sir Walter Raleigh's ill-fated "lost colony" in Virginia.

The English colonists were not alone in the New World, of course. There were the
settlers in the South and West, the French in Canada and the Mississippi Valley, a
Atlantic area. These earlier settlers were followed by other immigrants from Euro
world. Each group brought its religion, customs, beverages, and accustomed drink

TRIANGLE OF TRADE

During the colonial period, New England rum became a big trade item on the world m
slaves, fish, vessels, and lumber. The New England distillers were the bankers o
provided an international currency that made the commerce possible. Slavers of a

TEACHER AND STUDENT INFORMATION (continued)

credited with the discovery of distillation in the tenth century.
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used widely as beverages.

libition laws. In China during the Chou Dynasty (1134-256 B.C.) and during
f the Yuan Dynasty, laws against the manufacture, sale, and consumption of
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a fermented drink called "tari" from the sap of a palm tree, the govern-
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eat restraint in the use of alcohol. Although the Spanish did much toward
in South America, they seem to control themselves very well when it comes

their homes in Europe for the New World, they brought along their familiar
lcoholic beverages. Alcohol was present even in the earliest settlements,
-fated "lost colony" in Virginia.

lone in the New World, of course. There were the Spanish explorers, traders,
the French in Canada and the Mississippi Valley, and the Dutch in the Middle
ttlers were followed by other immigrants from Europe and other parts of the
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England rum became a big trade item on the world market. It was traded for
r. The New England distillers were the bankers of the slave trade. They
cy that made the commerce possible. Slavers of all nations used New England

rum as a means of filling their holds from the pens on the Guinea coast. The slav
West Indies. There they sold their slaves and took on a load of slave-produced mo
then brought to New England and traded for another cargo of rum. This trade patte
of trade."

WESTWARD MOVEMENT

As Americans moved westward, alcohol became more important to many of the people.
excused as being necessary for facing the hardships being imposed on them. Other
ing during this period were, "a good stiff belt now and again keeps a man going wh
work to do," or "I'm as tough as anyone, and I can drink with the best of them."

As alcohol became more and more of a problem, the temperance movement became stron
movement had the purpose of cutting down drinking, or eliminating it completely.
states to restrict sale, manufacture, and transportation of alcohol. In order to
"dry" states, patent medicines were sold, and they ran about 70 to 80 proof.

PROHIBITION 1920 - 1933

More and more pressure was applied by the temperance groups, and finally in 1920 t
was passed and the United States was a prohibition nation. Informal opposition to
rapidly. Evasion of the law became widespread. As one historian has put it, "the
that one cannot make a crime over night out of something that millions of people h
crime." Prohibition was especially resented by beer-drinking Americans of German
drinking Americans of Italian parentage.

The beer, wine, and liquor was then only patronized by smugglers, moonshiners, and
world trade in alcohol was a rich and lucrative one. The lack of funds to pay law
made the whole thing a big free-for-all. Many of the few officers that were hired
tion laws made more money from the underworld by looking the other way.

PRESENT DAY

Man has studied the history of his predecessors since man first began to record hi
also recorded the fact that man has learned little from lessons learned before him
to understand ourselves and the problems in our society by studying the past. The
of alcohol may become more meaningful to us. Our problems with alcohol are simila
except we live in a different time, a time of over-population, and of technology

TEACHER AND STUDENT INFORMATION (continued)

holds from the pens on the Guinea coast. The slavers then headed for the
heir slaves and took on a load of slave-produced molasses. The molasses was
traded for another cargo of rum. This trade pattern was called the "triangle

cohol became more important to many of the people. Much of the drinking was
facing the hardships being imposed on them. Other ideas that motivated drink-
good stiff belt now and again keeps a man going when he has a hard days'
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the underworld by looking the other way.

his predecessors since man first began to record his events. History has
n has learned little from lessons learned before him. At least, we can attempt
e problems in our society by studying the past. The laws and social controls
ningful to us. Our problems with alcohol are similar to those of the past,
time, a time of over-population, and of technology that is highly advanced

and changing very rapidly.
We still live with each other as people in the past have, so by observing what has occu
we can better understand drinking laws that restrict drinking and driving, and drinking
Unfortunate persons that have let alcohol become the guiding force in their lives can b
us that alcohol is not a plaything.

Although the lesson is hard to learn, most of us will learn it well. Alcohol can be to
just what we make it. Millions of people who drink alcohol use their heads and never ha
it, and many spend their working lives producing it.

TEACHER AND STUDENT INFORMATION (continued)

as people in the past have, so by observing what has occurred
ing laws that restrict drinking and driving, and drinking age limits.
let alcohol become the guiding force in their lives can be a reminder to
hing.

learn, most of us will learn it well. Alcohol can be to each one of us
s of people who drink alcohol use their heads and never have a problem with
ng lives producing it.

IX. STUDENT INFORMATION

FERMENTATION-ANAEROBIC RESPIRATION

INTRODUCTION

The food fuel utilized by cells as a source of energy for their metabolic processes early stages of glucose decomposition, oxygen is not required and pyruvic acid is f is present or lacking. When oxygen is present, the pyruvic acid is converted into water and there is a release of energy. However, in the absence of oxygen, the tra acid can take many paths, depending upon the enzymatic constitution of the organism animals, anaerobic oxidation in muscle cells converts pyruvic acid into lactic acid is known as glycolysis. In yeasts, the pyruvic acid is converted to ethyl alcohol bacteria, pyruvic acid decomposition yields an acid, or acids, and a gas. These tr acid are known as fermentation. Therefore, anaerobic respiration consists of glyco

This exercise will direct your attention to alcoholic fermentation by yeasts actin addition, you will investigate the fermentative activity of bacteria.

MATERIALS

Carbon Dioxide Production

Cake of yeast
Distilled water
Glucose
0.05% phenol red or bormthymot blue
10% potassium hydroxide
Stirring rod
250-ml Beaker
4 Smith fermentation tubes
Absorbent cotton

Alcohol Production

Filter paper
Funnel and support
Test tubes and rack
10% potassium hydroxide poiodide-iodine solution

Microscopic Appearance of Yeast Cultures

Microscope lamp
Slide and cover slip
Fermenting yeast culture
Yeast suspension in water

IX. STUDENT INFORMATION

FERMENTATION-ANAEROBIC RESPIRATION

ells as a source of energy for their metabolic processes is glucose. In the omposition, oxygen is not required and pyruvic acid is formed whether oxygen n oxygen is present, the pyruvic acid is converted into carbon dioxide and e of energy. However, in the absence of oxygen, the transformation of pyruvic depending upon the enzymatic constitution of the organism and the substrate. In n in muscle cells converts pyruvic acid into lactic acid. This transformation yeasts, the pyruvic acid is converted to ethyl alcohol and carbon dioxide. In mposition yields an acid, or acids, and a gas. These transofrmations of pyruvic tion. Therefore, anaerobic respiration consists of glycolysis and fermentation.

your attention to alcoholic fermentation by yeasts acting upon glucose. In gate the fermentative activity of bacteria.

ymot blue

iodide-iodine solution

Yeast Cultures Yeast suspension in water

10% potassium hydroxide
Stirring rod
250-ml Beaker
4 Smith fermentation tubes
Absorbent cotton

Medicine dropper
Incubator oven
100-ml graduate

Bacterial Fermentation

2 Fermentation tubes containing
glucose broth and bromcresol purple
24-hr Nutrient broth cultures of
eschercoli and bacillus subtilis

Inoculating loop mm
Ruler
Alcohol lamp
250-ml Beaker
10% potassium hydroxide
Incubator

DEVELOPMENT

Alcoholic fermentation-yeasts are unicellular fungi that are capable of conve
and carbon dioxide. This transformation is mediated by different enzymes whi
called zymase. This type of respiration is far less efficient than aerobic r

Carbon Dioxide Production: Crumble half a yeast cake into a beaker containin
Stir the mixture thoroughly. Divide the suspension into 50-ml portions. To
glucose and mix the solution thoroughly. Add enough of the yeast glucose mix
tubes (Fig. 1) to fill the arm of each tube as well as the bulb. Similarly,
tube with the yeast suspension. Label this tube "A." Add 3-5 drops of phenc
one of the fermentation tubes containing the yeast-glucose mixture. Label th

Be sure that the arm of each fermentation tube is full of the yeast-glucose m
bubbles. Plug the mouth of each tube with absorbent cotton and then place th
is set at 30° C. Examine the fermentation tubes at the end of the laboratory
day. Examine all the fermentation tubes for gas production as well as for co
untreated fermentation tube which shows a long gas column in its arm. Use a
squirt about 2 ml of a 10% solution of potassium hydroxide into this medium.
occur in the air column. Label this fermentation tube "C." Before you inter
in mind that both indicators are yellow in acid medium, whereas they retain t
blue) in an alkaline or neutral medium. Furthermore, potassium hydroxide is
(1) Compare the reactions and color changes which occurred in all the fermer
evidence do you have that carbon dioxide is an end product of yeast fermentat

Alcohol Production: Remove the cotton plugs from all the fermentation tubes
the tubes. You are right if you identify the odor in all the fermentation tu
exception of tube "A." To give greater validity to the experiment, you will

STUDENT INFORMATION (continued)

Inoculating loop mm
ple Ruler
Alcohol lamp
250-ml Beaker
10% potassium hydroxide
Incubator

re unicellular fungi that are capable of converting glucose to ethyl alcohol
formation is mediated by different enzymes which have been collectively
spiration is far less efficient than aerobic respiration.

mble half a yeast cake into a beaker containing 100 ml of distilled water.
ivide the suspension into 50-ml portions. To one portion, add 5 grams of
oroughly. Add enough of the yeast glucose mixture to three fermentation
of each tube as well as the bulb. Similarly, fill a fourth fermentation
Label this tube "A." Add 3-5 drops of phenol red or bromthymol blue to
containing the yeast-glucose mixture. Label this fermentation tube "B."

ermentation tube is full of the yeast-glucose mixture and devoid of air
ch tube with absorbent cotton and then place them into an incubator which
fermentation tubes at the end of the laboratory period and also the next
tion tubes for gas production as well as for color changes. Select an
ich shows a long gas column in its arm. Use a long medicine dropper to
ution of potassium hydroxide into this medium. Watch for any changes which
l this fermentation tube "C." Before you interpret your observations, bear
re yellow in acid medium, whereas they retain their original color (red,
l medium. Furthermore, potassium hydroxide is a carbon dioxide absorbent.
color changes which occurred in all the fermentation tubes. (2) What
on dioxide is an end product of yeast fermentation?

e cotton plugs from all the fermentation tubes. Smell the contents of all
ou identify the odor in all the fermentation tubes as alcoholic, with the
e greater validity to the experiment, you will identify the presence of

ethyl alcohol by the haloform reaction. The presence of ethyl alcohol is predicate
an alkaline solution of the halogen, iodine, which then yields iodoform.

Use the contents of the remaining unlabeled fermentation tube to detect the presen
haloform method. Filter about 5 ml of the fermenting mixture into a test tube. Ad
potassium iodide-iodine solution to give the solution a persistent faint yellow co
and Joseph). Shake the mixture as you add the reactants. Place the test tube in a
and heat to about 70° C. Remove the test tube from the beaker and waft the fumes t
hand. The sharp pungent odor is due to the presence of iodoform. Remove a drop o
and examine it microscopically. The crystalline design you should see is the resu
of iodoform. Let the test tube should appear. Since a pungent odor and yellow cry
can assume that they were derived from the interaction of ethyl alcohol and the io

Microscopic Appearance of the Yeast Cultures: Remove samples from the fermentatio
only yeast cells, as well as from the fermenting medium. Make wet mounts of the sa
microscopically with the high dry power. Compare the appearance of the yeast cell
(3) What morphological changes in the yeast cells have occurred in the fermenting
the biological significance of these changes?

Bacterial Fermentation: The pattern of fermentation varies with the bacterial spe
By inoculating with a variety of bacteria different carbohydrate broths, which con
it becomes possible to detect these fermentation characteristics.

Obtain nutrient broth cultures of bacillus subtilis and escherichia coli. In addi
tion tubes containing sterile glucose broth and two tubes containing sterile gluco
containing sterile lactose broth. All four fermentation tubes also contain bromcr
Inoculate one tube of glucose broth with bacillus subtilis and the other with esch
inoculate one tube of lactose broth with bacillus subtilis and the other with esch
that sterile conditions are maintained at all times. Label all the tubes. Keep t
the controls. Incubate all the cultures at 30° C. After 24 hours, remove the tub
examine all the cultures for acid and gas productions. Measure the height of the
in the fermentation tube. Use a medicine dropper to add 10% potassium hydroxide t
Let the tubes stand and again measure the height of the column of gas.

As you record your observations, focus your attention on the color present in each
presence of a gas column. In addition, you should be aware that the base color o
and that this changes to yellow in an acid medium. (5) Compare the fermentative
organism to glucose and to lactose. (6) Distinguish between the effect produced
these substrates.

eaction. The presence of ethyl alcohol is predicated upon its reaction with ogen, iodine, which then yields iodoform.

ng unlabeled fermentation tube to detect the presence of alcohol by the 5 ml of the fermenting mixture into a test tube. Add 4 drops of a 10% n to give the solution a persistent faint yellow color (Morholt, Brandwein, as you add the reactants. Place the test tube in a beaker of warm water e the test tube from the beaker and waft the fumes towards you with your s due to the presence of iodoform. Remove a drop of the solution to a slide The crystalline design you should see is the result of hexagonal crystals should appear. Since a pungent odor and yellow crystals were formed, you ved from the interaction of ethyl alcohol and the iodine.

Yeast Cultures: Remove samples from the fermentation tubes which contain rom the fermenting medium. Make wet mounts of the samples and examine them dry power. Compare the appearance of the yeast cells in the cultures. s in the yeast cells have occurred in the fermenting medium? (4) What is these changes?

attern of fermentation varies with the bacterial species and their substrate. of bacteria different carbohydrate broths, which contain a suitable indicator, these fermentation characteristics.

of bacillus subtilis and escherichia coli. In addition, take two fermenta- glucose broth and two tubes containing sterile glucose broth and two tubes th. All four fermentation tubes also contain bromcresol purple as the indicator. broth with bacillus subtilis and the other with escherichia coli. Similarly, broth with bacillus subtilis and the other with escherichia coli. Be sure intained at all times. Label all the tubes. Keep the original cultures as e cultures at 30° C. After 24 hours, remove the tubes from the incubator and cid and gas productions. Measure the height of the column of produced gas a medicine dropper to add 10% potassium hydroxide to these fermentation tubes. measure the height of the column of gas.

s, focus your attention on the color present in each tube, as well as the addition, you should be aware that the base color of the indicator is purple w in an acid medium. (5) Compare the fermentative response of each tose. (6) Distinguish between the effect produced by both organisms upon

INTERPRETATION

(a) Devise a controlled experiment which will show that fermenting yeast do produce car
(b) Compare the wet mounts of yeast suspended in water and in a glucose medium. How do
tion provide evidence that energy is liberated during fermentation? (c) Design a contr
which would make it possible to measure the energy released during fermentation of yeast
the energy exchanges during aerobic and anaerobic respiration. (e) In the experiment o
fermentation, the potasskum hydroxide did not completely remove the gas present in the a
tation tube. How do you account for this? (f) Suppose in the experiment on bacterial
glucose broth did not change color following its inoculation and incubation. How could
it was the result of the inability of the organism to ferment the contents of the tube o
to grow?

STUDENT INFORMATION (continued)

hich will show that fermenting yeast do produce carbon dioxide.
suspended in water and in a glucose medium. How does this observa-
liberated during fermentation? (c) Design a controlled experiment
re the energy released during fermentation of yeast. (d) Compare
nd anaerobic respiration. (e) In the experiment on bacterial
did not completely remove the gas present in the arm of the fermen-
this? (f) Suppose in the experiment on bacterial fermentation, the
llowing its inoculation and incubation. How could you tell whether
the organism to ferment the contents of the tube or its inability

HAND-OUT ON THE HISTORY OF ALCOHOL

Direction: Answer the questions exploring your ideas in a short outline form to broa
There are, also, some short factual answers to be given on the history of alcohol.

1. What did early man have to invent before he could make alcoholic beverages?

2. What small plant produces the alcohol?

3. What raw materials does yeast use to produce alcohol?

4. Give your opinion:

    a. What were some reasons early man may have had for drinking alcoholic beverag

    b. Did early man probably think alcohol had some mystic powers? Why, or why no

5. Did all drinking done by the Egyptians end with the drinkers being inebriated or

6. Give your opinion:

    a. Is vomiting pleasant in any way?

STUDENT INFORMATION (continued)

HAND-OUT ON THE HISTORY OF ALCOHOL

tions exploring your ideas in a short outline form to broaden your concepts.
factual answers to be given on the history of alcohol.

to invent before he could make alcoholic beverages?

es the alcohol?

yeast use to produce alcohol?

sons early man may have had for drinking alcoholic beverages?

ably think alcohol had some mystic powers? Why, or why not?

by the Egyptians end with the drinkers being inebriated or sick?

nt in any way?

b. How do you think they got Egyptian women to drink until they became sick?

c. Do people today drink until they are sick? Until they are dead? Why, or why not?

d. Is the taste of alcohol beverages a pleasant one?

7. What are some laws that we have today that are similar to Plato's recommendations?

8. Why is it wise to control the drinking of soldiers on duty?

9. Give your opinion:

   a. Should a person be able to drink as much as he wants, when and where he wants to? Why?

   b. Does drinking make a poor soldier?

10. What is meant by a social ban?

11. What are some names that are used, in our culture, to describe those persons who drink too much?

STUDENT INFORMATION (continued)

12. Did drink and fighting mix well for the Romans?

13. What similar problem are we having with our soldiers in Southeast Asia?

14. Write the penality for women who drank in early Rome?

15. Give your opinion:
    Is the age of thirty a good time to permit a person to begin drinking alcoholic beverages?

16. Who named alcohol?

17. What is aqua vitae?

18. What is prohibition?

19. Who had the earliest prohibition laws?

20. Can alcohol be made from the products of trees in this area?

STUDENT INFORMATION (continued)

21. What was rum made from?

22. Explain the "triangle of trade."

23. Why did certain states pass laws to keep down drinking?

24. What false attitudes during the westward movement tended to increase the drinking problem?

25. In what form was alcohol legally sold in "dry" states?

26. What is a "dry" state?

27. Give your opinion:
What is happening to a family when the provider is over-indulging in alcoholic beverages?

28. Do your parents or grandparents remember the prohibition era?

29. What were the dates when national prohibition went into effect?

STUDENT INFORMATION (continued)

30. During the prohibition era were there any smugglers, moonshiners, or bootlegger

31. Give several reasons why enforcement of prohibition laws were a failure?

32. Give your opinion:

    a. Can we learn anything about drinking problems that might face us in the futu

    b. Will there by anyone in this class who may have problems develop in his lif alcohol?

    c. Does anyone have control over the way alcohol is going to affect your life?

    d. Is it true that your friends are the ones who are most likely to lead you in

STUDENT INFORMATION (continued)

ion era were there any smugglers, moonshiners, or bootleggers operating in Montana?

s why enforcement of prohibition laws were a failure?

ything about drinking problems that might face us in the future by studying the past?

nyone in this class who may have problems develop in his life because of drinking

e control over the way alcohol is going to affect your life? Who?

your friends are the ones who are most likely to lead you into trouble with alcohol?

STUDENT INFORMATION (continued)

LABORATORY EXERCISES

(Warning: A
are toxic!!)

Number I (May be presented as a demonstration)

Chemical Properties

Materials

Ethyl alcohol - 95%
Methyl alcohol
Isopropyl alcohol
Litmus paper (red, blue)
Watch glass
Basic and acidic solution

Part I - Acid or Base

Test alcohol for OH or H ions.

1. Test basic solution with litmus.

   The red litmus turns to what color? ________________

2. Test acidic solution with litmus.

   The blue litmus turns to what color? ________________

3. Test the alcohol solution with litmus.

   The red litmus turns to what color? ________________

   The blue litmus turns to what color? ________________

   (May also test water as control)

Conclusion: ____

STUDENT INFORMATION (continued)

LABORATORY EXERCISES (Warning: All laboratory alcohols are toxic!!)

a demonstration)

95%

l
d, blue)

solution

se

OH or H ions.

c solution with litmus.

itmus turns to what color? ______________

ic solution with litmus.

litmus turns to what color? ______________

alcohol solution with litmus.

itmus turns to what color? ______________

litmus turns to what color? ______________

lso test water as control)

Part II - Solubility

Pour small amount of alcohol in water and observe.

(May use oil and water to help illustrate solubility.)

Conclusion: ____

____

Part III - Oxidation (chemical addition of 0 to atom or compound)

Place small amount of alcohol in a watch glass and ignite. (Use

Conclusion: ____

____

Number II

Physical Characteristics

Materials

Ethyl alcohol (denatured)
Methyl alcohol
Isopropyl alcohol
250 ml flask
2-holed stopper
Burner
Several beakers

Part I

Place ethyl alcohol in beakers and examine.

1. What common liquid does alcohol look like? ____________

STUDENT INFORMATION (continued)

ity

unt of alcohol in water and observe.

and water to help illustrate solubility.)

____

____

on (chemical addition of O to atom or compound)

ount of alcohol in a watch glass and ignite. (Use water or gasoline as control)

____

____

ics

(denatured)

ohol

er

rs

lcohol in beakers and examine.

ommon liquid does alcohol look like? ________________

2. Is the odor of ethyl alcohol pleasant? ______________

3. Does the strength of the odor increase with the increase in percent

   solution? ____________ (Called constant vapor pressure) (May
   of different percents to illustrate)

4. Does alcohol diffuse readily throughout the room? ____________

Part II - Boiling Point of Alcohol

Place alcohol in 250 ml flask, about 100 ml, with a thermometer at the surfa
bring to a boil and record the temperature.

1. The temperature is __________ ° F

2. Why is this different than the temperature given in class? ______

Number III - Biological Effects

Biological Effects

Materials

95% Ethyl alcohol (denatured)
Methyl alcohol
Isopropyl alcohol
Algae, earth worms

Part I - Dehydration

Place algae on a slide, observe under the microscope, add 95% alcohol.

1. What happened to the algae cells? ______________________________

2. What caused this? ______________________________________

STUDENT INFORMATION (continued)

thyl alcohol pleasant? ____________

h of the odor increase with the increase in percent of alcohol in the

________ (Called constant vapor pressure) (May set out some alcohol
rcents to illustrate)

ffuse readily throughout the room? ____________

lcohol

flask, about 100 ml, with a thermometer at the surface of the alcohol,
rd the temperature.

is ________ ° F

ferent than the temperature given in class? ________________________

enatured)

observe under the microscope, add 95% alcohol.

the algae cells? ____

? ____

STUDENT INFORMATION (continued)

Place a drop of alcohol on the back of your hand, repeat several times in the same spot as the alcohol evaporates.

1. Does the alcohol feel warm or cold? ______________

2. Is there any change in the skin where the alcohol was placed? Why? ______________

____

Part II - Toxic Effects

Place three earthworms in different concentrations of alcohol, 4%, 47%, 95%, and observe reaction over a period of time, record observations.

Time	4% Alcohol	47% Alcohol	95% Alcohol
1 Min.			
2 Min.			
3 Min.			
4 Min.			
5 Min.			
10 Min.			
15 Min.			
20 Min.			

X. GLOSSARY

atom	the smallest part of an element
abstain	a doing without
alcoholic content	the amount of alcohol in a given substance by weight or volume
alcoholism	a diseased condition caused by habitually drinking too much alc
"al kohl"	Arabic word referring to distilled alcohol
amnesia	partial or total loss of memory
anesthetic	a drug, gas, etc., that produces a partial or total loss of the or touch
antiseptic	free from infection; stopping the action of microorganisms
aqua vitae	name given to distilled alcohol in the 16th century
blood pressure	the pressure exerted by the blood against the inner walls of th
carbon	a non-metallic chemical element found in many compounds
compound	a chemical bonding of two or more atoms
culture	the sum of living patterns in a given civilization
depressant	a substance which lowers the rate of muscular or nervous activi
digestion	breakdown of large molecules into smaller ones
dilation	enlargement of an organ, cavity, or opening of the body beyond
disinfectant	anything that destroys harmful bacteria or virus
distillation (fractional)	the process of first heating a mixture to separate the more vo parts and then cooling anc condensing the resulting vapor so a pure or refined substance

X. GLOSSARY

mallest part of an element

ng without

mount of alcohol in a given substance by weight or volume

seased condition caused by habitually drinking too much alcoholic liquor

ic word referring to distilled alcohol

ial or total loss of memory

ug, gas, etc., that produces a partial or total loss of the sense of pain, temperature,
ouch

from infection; stopping the action of microorganisms

given to distilled alcohol in the 16th century

pressure exerted by the blood against the inner walls of the veins and arteries

n-metallic chemical element found in many compounds

emical bonding of two or more atoms

sum of living patterns in a given civilization

ubstance which lowers the rate of muscular or nervous activity

akdown of large molecules into smaller ones

argement of an organ, cavity, or opening of the body beyond normal size

thing that destroys harmful bacteria or virus

process of first heating a mixture to separate the more volatile from the less volatile
ts and then cooling anc condensing the resulting vapor so as to produce a more nearly
e or refined substance

GLOSSARY (continued)

distillation (destructive)	process of changing the form of organic molecules by heat and pressure
drug	compounds that affect the body other than to nourish it
elimination	to remove, excrete
ethyl alcohol	beverage alcohol which is composed of carbon, hydrogen, and oxygen - C_2
euphoria	a feeling of well being
external	on the outside or exterior
false confidence	an inaccurate or mistaken feeling of being assured or certain
fermentation	breakdown and change of molecules in a substance due to a ferment such
food	compound that produces growth and energy in the body
habit forming	a substance is habit forming if it causes its user to repeat its use ov again so that it becomes automatic
hydrogen	an inflammable, colorless, odorless, gaseous chemical element
indulged	to yield to the desire of
inferiority	the quality or condition of feeling lower in value, below average, or m
inflammation	diseased condition characterized by reddness, heat, and swelling
internal	of, or on, the inside
inebriate	to make drunk, to intoxicate
malnutrition	undernourishment resulting from insufficient food or improper diet
mature	full grown; fully developed; mental and physical development

GLOSSARY (continued)

process of changing the form of organic molecules by heat and pressure

compounds that affect the body other than to nourish it

to remove, excrete

beverage alcohol which is composed of carbon, hydrogen, and oxygen - C_2H_5OH

a feeling of well being

on the outside or exterior

an inaccurate or mistaken feeling of being assured or certain

breakdown and change of molecules in a substance due to a ferment such as a bacteria

compound that produces growth and energy in the body

a substance is habit forming if it causes its user to repeat its use over and over again so that it becomes automatic

an inflammable, colorless, odorless, gaseous chemical element

to yield to the desire of

the quality or condition of feeling lower in value, below average, or mediocre

diseased condition characterized by reddness, heat, and swelling

of, or on, the inside

to make drunk, to intoxicate

undernourishment resulting from insufficient food or improper diet

full grown; fully developed; mental and physical development

GLOSSARY (continued)

muscular coordination	harmonious, orderly adjustment or working of muscles
organic	composed of C,H,O related to living things
oxidation	the chemical bonding of oxygen to another atom
oxygen	colorless, odorless, gaseous chemical element
prohibition	the forbidding, by law, of the sale and sometimes the manufactur alcoholic liquors as beverages
proof	commercial method of declaring the amount of alcohol in a bevera
reaction	a response to a stimulus
reality	a state or quality of being real
reflex	reaction to a stimulus
self-control	control (command; authority) of oneself, or of one's own emotio
self-discipline	self-training which corrects, molds, strengthens, or perfects
self-respect	proper respect (consideration) for oneself, one's behavior
social problems	problems having to do with human beings living together as a gr requiring that they have dealings with one another
solvent	a substance used for dissolving another substance
standard	some measure, principle, or model with which things of the same in order to determine their quality or value
stimulant	a substance that increases the action of a body part; stimulant wakefulness, and alertness
temperance	habitual moderation in the indulgence of appetites, etc.

GLOSSARY (continued)

	harmonious, orderly adjustment or working of muscles
	composed of C,H,O related to living things
	the chemical bonding of oxygen to another atom
	colorless, odorless, gaseous chemical element
	the forbidding, by law, of the sale and sometimes the manufacture and transportation of alcoholic liquors as beverages
	commercial method of declaring the amount of alcohol in a beverage
	a response to a stimulus
	a state or quality of being real
	reaction to a stimulus
l	control (command; authority) of oneself, or of one's own emotions, desires, and actions
line	self-training which corrects, molds, strengthens, or perfects
t	proper respect (consideration) for oneself, one's behavior
lems	problems having to do with human beings living together as a group in a situation requiring that they have dealings with one another
	a substance used for dissolving another substance
	some measure, principle, or model with which things of the same class are compared in order to determine their quality or value
	a substance that increases the action of a body part; stimulants produce excitation, wakefulness, and alertness
	habitual moderation in the indulgence of appetites, etc.

CULMINATING ACTIVITIES

Have students discuss the invironmental and cultural pressures which might lead drugs, and alcohol.

Invite guest lecturers who are qualified to keep students informed of new infor drugs, and alcohol.

Plan a "mock trial" to be presented to the student body or the P.T.A.

Invite a law enforcement officer to talk about the local scene.

Plan a program for another class to witness.

Select a panel of students and have each student discuss a phase of the tobacco from the viewpoint of the traffic officer, juvenile court judge, athletic coach divorce court judge, wife, and a child.

CULMINATING ACTIVITIES

nvironmental and cultural pressures which might lead them to use of tobacco,

are qualified to keep students informed of new information dealing with tobacco,

resented to the student body or the P.T.A.

fficer to talk about the local scene.

class to witness.

and have each student discuss a phase of the tobacco, drugs, and alcohol problem
raffic officer, juvenile court judge, athletic coach, employment counselor,
and a child.

EVALUATION

ATTITUDES

Has the student:

Gained self-respect in regard to his abilities to make decisions?

Developed a good attitude toward good health practices and ideas?

Gained understanding of the influence of alcohol, drugs, and tobacco?

Developed attitudes on why not to use alcohol, drugs, and tobacco?

Become more willing to assume responsibility for individual and group respon

Gained an understanding about the needs and problems of alcohol, drugs, and

Been prepared for more effective citizenship?

When choices and decisions need to be made, do they have the right attitude
correct choice on forethought, not afterthought?

EVALUATION

ATTITUDES

espect in regard to his abilities to make decisions?

ood attitude toward good health practices and ideas?

tanding of the influence of alcohol, drugs, and tobacco?

itudes on why not to use alcohol, drugs, and tobacco?

illing to assume responsibility for individual and group responsibilities?

erstanding about the needs and problems of alcohol, drugs, and tobacco?

for more effective citizenship?

and decisions need to be made, do they have the right attitudes and materials to make the
e on forethought, not afterthought?

SOURCES OF INFORMATION

American Cancer Society
Montana Division
3022 Fourth Avenue North
Billings, Montana 59101

American Cancer Society
219 East 42 Street
New York, New York 10017

American Heart Association
44 East 23 Street
New York, New York 10010

American Medical Association
535 North Dearborn
Chicago, Illinois 60610

American Temperance Society
Mr. Jesse O. Gibson
6840 Eastern Avenue, N.W.
Washington, D. C. 20212

Association Films, Inc.
600 Grand Avenue
Ridgefield, New Jersey 07657

Channing L. Bette Co., Inc.
Educational Services
Greenfield, Mass. 01301

Department of Health, Education and Welfare
Public Health Service
National Institute of Mental Health
5454 Wisconsin Avenue
Chevy Chase, Maryland 20203

SOURCES OF INFORMATION (continued)

Encyclopaedia Britannica
Educational Corporation
Film Department
2150 South Second, West
Salt Lake City, Utah 84115

Film Associates
11559 Santa Monica Blvd.
Los Angeles, California 90025

Harcourt, Brace, and World
Guidance Associates
Pleasantville, New York 10570

Health Education Service
P. O. Box 1283
Albany, New York 1220

Jaylark Instruments Corporation
10 East 49 Street
New York, New York 10017

McGraw-Hill Book Company
Text-Film Division
330 West 42 Street
New York, New York 10036

McGraw-Hill Book Company
8171 Redwood Highway
Novato, California 94947

Montana Heart Association
510 First Avenue North
Great Falls, Montana 59401

SOURCES OF INFORMATION (continued)

Montana Tuberculosis Association
825 Helena Avenue
Helena, Montana 59601

National Cancer Institute
United States Public Health Service
Bethesda, Maryland 20014

National Clearinghouse for Smoking and Health
Webb Building, Room 812
4040 North Fairfax Drive
Arlington, Virginia 22203

National Interagency Council on Smoking
and Health
P.O. Box 3654
Central Station
Arlington, Virginia 22203

National Tuberculosis Association
1790 Broadway
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